



**HEALTH FOR ALL:
A KEY GOAL FOR UZBEKISTAN
IN THE NEW MILLENNIUM**



Uzbekistan

TASHKENT - 2006

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FOREWORD

The 2006 National Human Development Report (NHDR) continues the tradition of UNDP's annual analysis of overall human development in the country, while also focusing on a selected priority area of Uzbekistan's socio-economic development. This year, we have taken up **health** since the National Health Sector Reform Program (1999-2005) just ended, providing a timely opportunity to review its accomplishments. Moreover, many of the Millennium Development Goals (MDGs) cover the health field and the interim Welfare Improvement Strategy of the Government strongly emphasizes the health sector.

When compared with the health indicators for countries of similar GDP per capita, Uzbekistan's health situation looks admirable. However, when viewed against the Government's ambitious living standards for the citizens, it is clear that there is much to accomplish in the coming years.

In its first four chapters, the report contains an excellent description and analysis of recent human development trends in Uzbekistan, and relates the national health indicators to the overall human development indicators. That is followed by a discussion of the MDGs in Uzbekistan, the primary challenges that lie before the nation until 2015, and the Government's current efforts to achieve them.

The report's recommendations mainly focus on public healthcare, including proposals for the next phase of health sector reform, the role of the public and private sectors in those reform efforts, the need to increase public oversight and improving the quality of the healthcare services provided to the people of Uzbekistan.

This report owes a great deal to the collaboration of the many ministries, departments, academic establishment and individuals. In that regard, I would especially thank the Ministry of Economy, the Ministry of Health and the State Comity of Statistics. Moreover, the entire UN system and the donor community also provided very valuable inputs.

I would like to express UNDP's special gratitude to Mrs. Saidova, the First Deputy Minister of Economy, who led a very talented team of national authors, resulting in a comprehensive report that clearly identifies the achievements of Uzbekistan, as well as the remaining challenges that require the close collaboration of the Government, the private sector, the civil society, and the donor community. I would also like to thank Dr. Kamola Safaeva for her dedication and able management of the entire 2006 NHDR preparation for UNDP.

Fikret Akcura
UNDP Resident Representative



ABBREVIATIONS LIST

ABD	— Asian Bank of Development
CIDA	— Canadian International Development Agency
CIS	— Commonwealth of Independent States
CRFU	— Consumer Rights Federation of Uzbekistan
CSW	— Commercial sex workers
DOTS	— Directly Observed Treatment, Short-course
GDP	— Gross National Product
GP	— General practitioner
HD	— Human Development
HDI	— Human Development Index
HDR	— Human Development Report
HLS	— Healthy lifestyle
IDU	— Injecting drug users
IMF	— International Monetary Fund
JICA	— Japan International Cooperation Agency
MDG	— Millennium Development Goals
MSM	— man sleeping with man
PHC	— Public health care
RSELS	— Regional strategies for enhancement of living standards
STI	— Sexually transmitted infections
SVP	— Rural outpatient posts
TB	— Tuberculosis
UNAID	— Joint UN Programme on HIV/AIDS
UNDP	— United Development program
UNFPA	— United Nations Population Fund
UNICEF	— United Nations Children's Fund
UNODC	— United Nations Office on Drugs and Crime
USAID	— United States Agency for International Development
USSR	— Union of Soviet Social Republics
UzMoH	— Ministry of Health of Uzbekistan
WB	— World Bank
WHO	— World Health Organization
WISP	— Welfare Improvement Strategy Programme

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EXECUTIVE SUMMARY

The era of globalization has paved the way for a giant positive leap forward in high technology and in the development of world trade and investment. Today's generation in every country of the world has hopes that it will be richer, better educated and healthier than previous generations were. Progress is being made practically all over the world in resolving the problems of primary education and reducing infant/child mortality. Human life expectancy is increasing.

Despite the benefits of globalization, however, problems in eliminating the gap between rich and poor countries still exist, while the gap in some countries is even widening. At the same time, poverty is not the only threat to progress in human development. The worldwide spread of dangerous diseases, e.g. HIV/AIDS, TB, and avian flu, poses another dangerous threat to progress in human development.

The main objective of human development is to create an environment that politically, economically, socially, culturally and ecologically is conducive to promoting the public welfare while providing everyone with the opportunity to enjoy a long, healthy and productive life.

This Annual Report on Human Development in the Republic of Uzbekistan focuses on one of the key indicators which reflects the essence of human existence and development, namely, health status. The Report consists of four chapters which describe and analyze general human development trends in the Republic of Uzbekistan while pointing out how the country's health indicators and other human development indicators are interrelated. A special chapter titled Millennium Development Goals (MDG) focuses on the problems the Republic of Uzbekistan faces and on the efforts the country is making to achieve the MDG.

The authors of the Report devote particular attention to public health care development, health status and to the factors that determine the nation's health status. The report concludes, logically, with a chapter analysing the prospects for public health care development, including the strategy for health care reform, the role of the public and private sectors in developing the health care system and improving the quality of the health care services the system provides the people of Uzbekistan.

Chapter 1. Human Development and Health

Thanks to the economic reforms the Government of Uzbekistan carried out in 2005, the Republic of Uzbekistan experienced a 7% growth rate in GDP for the second year in a row. Growth rates in industry, agriculture and other branches of the economy were even greater. The rate of growth of the small enterprise sector went above the 25% point, while domestic trade and export indicators experienced growth rates of 10-15%.

Thanks to the reforms, annual per capita income grew by 22% as well. Social infrastructure is undergoing dynamic development: the number of schools, vocational colleges, academic lyceums, rural doctor's stations and other health care institution buildings built or renovated increased. Progress is being made in providing the public with safe drinking water. State budget expenditures for social programmes exceeded 50%, while growing public revenues ensured a balanced budget.

For the past decade the Human Development Index (HDI) has been increasing in all of the world's developing regions, although at varying rates. However, the HDI in 18 countries, with a combined population of 460 million people, was lower in 2003 than it was in 1990. Six of those 18 countries are former Soviet Republics.

Uzbekistan's HDI is growing constantly. In 2004 its HDI was 0.756 compared with 0.747 in 2003. Thanks to positive social and economic development, the Republic of Uzbekistan maintained that trend in 2005 and thanks to educational reforms, Uzbekistan's already rather high indicators for the number of years of education completed and for the literacy rate also increased. Life expectancy at birth reached 72.5 years, an average increase of not quite (0.9) one year.

The Republic of Uzbekistan's indicators for educational development and life expectancy at birth are very close to those of countries with a high HDI. It is unfortunate, therefore, that Uzbekistan's low per capita GDP has kept it from being added to the list of high HDI countries.

Economic growth is one of the factors that make it possible to provide easier access to quality health care services. By the same token, it is also true that a society whose population is not healthy and does not repro-

duce itself is unable to sustain a high rate of economic development and improve its people's well-being. As an indicator of the level, mode and quality of human life, health status is linked very closely to the MDGs. Public health, as well as individual health, are state strategy goals and a prerequisite for national security. Public health is known to be a necessary condition of maintenance of healthy human resources in the country and a criterion of efficacy of state management.

The quality of people's health is closely associated with poverty level. There is a vicious circle: "poor family – poor health, poor health – poor family". The vicious circle can be broken only with state support. Government can help poor families to improve their health by developing a health care system giving family members broad access to health care services. Improved health contributes to increased labour productivity and helps the poor to break the cycle of poverty.

Public and individual health, along with growth of a country's economic resources, creates job opportunities and improves well-being. Education has a direct influence on the individual's attitude to his/her health. Educated people are more health conscious, make more effective use of preventive measures, are more likely to practice a healthy life style and quick to notice disease, and able to give themselves first aid and to seek quality health care services.

The environment and living conditions have a direct impact on the health status of the public. Environmental degradation can harm not only the health of those alive today but can also inflict harm future generations by damaging the gene pool.

Chapter 2. Health and the Millennium Development Goals

The Millennium Declaration drew up a global agenda for the 21st century and set action-oriented goals known as Millennium Development Goals (MDGs). By 2015 eight MDGs are to be achieved at the global, regional and national levels, using special indicators to measure achievement.

The first seven MDGs goals aim to reduce poverty in all its manifestations. The eighth provides the means to achieve the first seven and calls upon developed countries to take action to further reduce the debt of poor countries and to contribute to the development of low-income countries.

As a signatory to the Millennium Declaration, Uzbekistan has made significant strides to meet its MDG commitments. The Government of Uzbekistan realizes the urgency of these commitments and their relationship to its national development.

By 2015 the poverty level is expected to be cut in half compared with 2001, i.e., reduced to 14%. The data for 2003-2004 are encouraging: each year the poverty index went down by over 1 percentage point.

In the Republic of Uzbekistan, all children in all provinces obtain an 11- to 12-year secondary education. Many schools, colleges and lyceums are built each year. Over 59,600 students were enrolled in institutions of higher education in 2005, of which 54,200 were enrolled in bachelor's degree programs and 5,400 in master's degree programs, representing an increase of 1.33 times over enrolment in 2000. A positive trend is observed in enrolment of women in Uzbekistan's institutions of higher education: the number of women admitted has increased by 44.3%, while the number of men enrolled has increased by 26.8 per cent.

In 2004 infant mortality was reduced by 22%. Mortality among children under 5 years of age was 22% lower than in the baseline year. The rate of maternal mortality has gone down by 7%.

Some success was achieved in slowing the explosive growth of the number of HIV/AIDS patients (109% in 2005 compared with 187% in 2003).

After increasing for seven years straight, the tuberculosis prevalence rate began a downward trend according to the WHO Global Report. In 2004 the TB rate was 75.8 ppm (per 100 000 of population) compared with 80 ppm in 2002. Over 80% of Uzbekistan's population now has access to DOTS programmes. A few cases of malaria have recently been reported in the country.

In 2004 the share of the population provided with safe drinking water increased 3.4 times to 83.8%. In rural areas, this indicator increased from 71.0% to 78.5%. Some 40% of the urban and 5% of the rural population have better sanitary and hygienic conditions now. The Government of the Republic of Uzbekistan, in collaboration with the ABD, UN and World Bank in 2004 formulated a Welfare Improvement Strategy for of the Population (WISP) of Uzbekistan between 2005 and 2010 which sets priorities linked closely to Uzbekistan's MDGs. The Republic of Uzbekistan must work very hard to improve the structure of its people's nutrition, in particular, to offset micronutrient deficiencies (iodine, iron, vitamin A).

Many problems regarding the protection of women's reproductive health remain. Although rates of maternal and infant mortality are decreasing in comparison with those of developed countries, maternal and infant mortality remain relatively high in Uzbekistan. Maternal and child health were improved by: implementation of comprehensive programmes for the improvement of the health of women of reproductive

age and of children; setting up special prevention and treatment centres for mothers and children in hospitals/out-patient clinics; providing better access to various modern contraceptives; and encouragement of longer spacing between births.

Expert data indicate that achieving the MDG infant mortality reduction target is a fully feasible and manageable process. A decrease in infant mortality depends, first of all, upon: the quality of health care services provided during labour and the first days of a newborn's life; improvement of health care workers' skills; and providing health care facilities with the necessary equipment.

Implementation of the Women and Younger Generation Health Improvement Project, a USD 40 million project funded by the ABD, was begun in 2005. Under the Project, newborn resuscitation units in central district hospitals and provincial maternity hospitals in five pilot provinces are to be equipped with special equipment.

In the context of achieving the MDGs, the struggle against extremely dangerous social diseases such as HIV/AIDS takes on particular importance. Curbing the rapid spread HIV/AIDS in Uzbekistan is becoming a more and more urgent problem.

Between 1987 and 1999 76 cases of HIV were registered in Uzbekistan. Since 2000 the number of cases has been climbing steadily. Since the first case was diagnosed in 1987, the total number of people registered as HIV- positive people has grown to 7,600. Since 1987, 574 HIV-positive patients have died, 70 of whom had AIDS.

Uzbekistan has received a five-year USD 24.5 million Global Fund Grant to Combat the Spread of HIV/AIDS. The Grant program provides for: preventive measures focused on groups at risk; better access to health care services and support for vulnerable groups in the population as well as provision of antiretroviral therapy; creation of a supportive environment for vulnerable groups in the population and protection of the rights of people living with HIV/AIDS.

The prevalence of tuberculosis has become a problem of global significance. According to WHO data, one-third of the world's population is infected with tuberculosis, with 8 to 10 million people contracting the disease and 2.5 to 3 million people dieing from it annually. According to various estimates, without effective control and treatment, by 2020 there will be roughly 1 billion people with tuberculosis worldwide, another 200 million will contract the disease and another 70 million will die from it. The toll from tuberculosis is far higher than that from any other infectious disease. The fact that in the last decade

the TB rate in Uzbekistan increased by 78.7% and that the total number of people infected with tuberculosis increased by 54.1% and TB mortality rose by 57.5% is alarming. The level of mortality due to TB has remained stable for the past five years. Since 2003 some stabilization of the TB morbidity rate has been observed.

The law On Protection of the Population Against Tuberculosis of the Republic of Uzbekistan entered into force in 2001. On the basis of this law, measures are being taken to prevent the spread of the disease, free treatment of the disease is provided, vaccination of newborns and re-vaccination of children against tuberculosis is mandatory. Unfortunately, resistant strains of tuberculosis have recently started becoming more and more common. They do not respond to treatment by regular antibacterial drugs. Scientists have shown that over the past 30 years the primary resistance of tuberculosis mycobacterium has become 3.8 times stronger, and drug resistance 10 times stronger. Uzbekistan's Strategic Program to Reduce Tuberculosis Morbidity and to Prevent Tuberculosis for 2004-2008, which was approved in 2003, projects that 70% of TB cases will be diagnosed early and that 85% of TB patients will recover. National government officials view implementation of the Strategic Program as meeting one of the MDGs.

Some 24% of diseases and 23% of deaths worldwide are caused by exposure to environmental factors which could have been prevented. Efforts need to be focused on attaining priority objectives of mitigating the adverse effect of environmental factors on population health taking into consideration the current structure of morbidity in the Republic of Uzbekistan. These objectives include: eliminating micronutrient deficiencies caused by the lack of micronutrients in soil and water (programmes on reducing iodine, iron, and vitamin A deficiencies); providing the population with a safe drinking water supply; reducing exposure of water and air to adverse anthropogenic factors; improving professional working conditions.

Chapter 3. Public Health Care in Uzbekistan

Population health status and the factors that determine it are key features of the public health care system of any country. Life expectancy is considered to be an integral part of population health status. The population of the Republic of Uzbekistan on average has a relatively long life expectancy which in 2004 was 72.5 years, compared with 69.3 years in 1990. This indicator is higher in the Republic of Uzbekistan than in many other CIS countries. For instance, in Russia it is 66.7 years, in Byelorussia 69.9 years, in Ukraine 69.5

years, in Kazakhstan 66.2 years, and in Kyrgyzstan 68.4 years.

Health status is also characterized by the level of morbidity among the population. The total morbidity rate in the Republic of Uzbekistan in 2004 was 9.9% lower than it was in 2003. Uzbekistan still bears the so-called “double burden” of having to bear not only the burden of infectious diseases but also the burden of noninfectious diseases common in developed countries (cancer, blood diseases, circulatory and respiratory diseases) which account for a substantial proportion of its total morbidity.

Demographic factors – such as a relatively high birth rate, a large share of children under 14 years of age, a predominantly rural population, and alternation of densely populated areas with areas of low population density – also have an impact on Uzbekistan’s health status and morbidity structure.

Healthy life style principles are important for reducing the morbidity rate and increasing life expectancy. These principles should be observed throughout the entire life cycle: preparation of parents for child birth, child birth, infancy, childhood, adolescence, maturity, and old age.

A key factor in public health is the health care delivery system which in the Republic of Uzbekistan includes 1,165 hospitals with 142,900 beds. The number of hospital beds per 10,000 people is 54.9. Rural in-patient services are available in 159 central district hospitals, 36 district hospitals, and 169 rural district hospitals. The reorganization of the health care system resulted in the closing/reorganising of 80 rural district hospitals whose number of beds was reduced by 24%. Such restructuring of health care institutions in rural administrative districts contributed to the redistribution of patient flows towards increasing the share of patients admitted to central district hospitals. This made it possible to improve the quality of health care services and cut costs by eliminating the inefficient use of rural hospital beds.

However, it should be stressed that reorganisation and reduction in the number of beds have not produced the desired outcomes yet. Despite shorter periods spent in inpatient care, the average length of time a bed is occupied increased insignificantly from 294.8 days in 1998 to 304.9 in 2004. This indicates mismanagement of budget allocations in the sector.

While 49.8% of the country’s hospital beds are in rural areas, more than 60% of the country’s population lives in rural areas. Such hospital bed distribution does not contribute to ensuring equal access of the rural population to skilled hospital services and increases the gap between large cities and rural areas in terms

of in-patient care indicators. As anywhere else in the world, the concentration of special medical assistance and high-tech equipment in large urban health institutions lowers the access the rural population has to such assistance and facilities. Public health care institution distribution can be further improved by setting up specialised provincial clinics as part of provincial multi-field hospitals. This will lead to efficient use of budget allocations, eliminate duplication of services, optimize distribution of expensive diagnostic and laboratory equipment, and increase medical personnel efficiency.

Chapter 4. The Outlook For Health Care in Uzbekistan

Although Uzbekistan’s health care system was rather well developed by the early 1990s, its population health status indicators were among the worst of CIS countries. Maternal and child mortality indicators were unacceptably high from the perspective of developed countries. The quality of health care services was low, particularly in rural areas. Health facilities had outdated equipment inadequate for high quality diagnostics and treatment. Many high-tech interventions were not possible, even at specialized clinics, due to the lack of equipment and adequately qualified personnel. And beyond that, the health care system proved to be completely unprepared for Uzbekistan’s transition to a market economy. Under these circumstances, the major directions that health care reforms took were:

- A new conceptual and practical approach to maternity and childhood emphasizing favorable environment for childbirth and for raising a healthy generation;
- Fundamentally new approaches to building the health care system and developing its infrastructure with a major reform objective of providing equal access to primary health care in urban and rural areas;
- Rejection of old stereotypes and major increase in funding sources including development of paid services and a private health care sector;
- Optimizing the sector’s funding system by allocating budget funds chiefly for primary care, outpatient and clinic treatment, and by reducing the emphasis on the costly, ineffective in-patient system; and
- Establishment of an innovative system of emergency medical assistance on all administrative and territorial levels.

In building the new health care system, the Government of Uzbekistan has been guided by the following principles and precepts:

- For human development purposes, health care must be accessible to all population groups. There must be unlimited access to primary health care which must be free-of-charge, even in a market economy;
- Residence in rural areas must not negatively impact human capacity development. The previous system of rural primary health care services provided by medical attendants (feldshers) resulted in discrimination against the rural population, compared with the urban population. Therefore, improvement of the quality of rural health care services is the centerpiece of the new health care system. Under the new system, new health care institutions – rural doctors' posts – are being created, at which medical assistance provided by medical attendants is being replaced by medical assistance provided by qualified health care staff with medical university degrees.
- Medical specialization at the primary care level squanders budget appropriations while failing to provide systematic and comprehensive patient care that takes into account that each individual is unique. Therefore, the new primary health care system focuses on providing efficient and effective medical assistance amenable to integrated case management by general practitioners (GP) who provide the bulk of primary medical assistance.
- Patients are the most vulnerable during the very first minutes of a health emergency. Accessible, high quality, free-of-charge emergency medical treatment is therefore absolutely indispensable. For this reason, a special network of well-equipped facilities providing emergency inpatient medical assistance was established nationwide from central to district levels.
- Budget funding of health care in rural regions must provide well managed health care services on a per capita basis, with the bulk of the funding allocated for preventive medicine measures and out-patient treatment, not for costly inpatient hospital treatment;
- The medical treatment system will be improved if specialized clinics are operated in tandem with an effective primary health care tier and quality medical emergency service. To do so requires establishment of specialized clinics for specific health problems, equipped with high-tech equipment and staffed by highly qualified specialists.

Health is a guaranteed human right. In the Republic of Uzbekistan, guarantees for the right to health have been established and continue to be enhanced by: legislation, non-governmental organizations defending human rights, and ombudsmen.

Broad involvement of civil society institutions in patient rights issues is necessary in Uzbekistan for the following reasons:

- First, with public institutions unprepared for the rapid pace of health care system reforms, public health care services are often unaffordable and of poor quality while the paid health care services private hospitals provide go unregulated;
- second, the public is unaware of its rights to guaranteed health care services because the human and financial resources needed to inform the public of its rights have not been allocated;
- third, state run health care facilities, reporting as they do to the Government, are rarely interested in having the mass media openly discuss the health care system's problems and shortcomings. An independent evaluation of the quality of health care services needs to be conducted and all concerned parties and society as a whole need to enter into the broadest possible debate of the results of that evaluation; and fourth, involving civil society institutions in the discussion of the health care system's shortcomings is conducive to promoting the elimination of those shortcomings.

Preventive health care, the healthy life-style concept, and improvements in the quality of health care services constitute the strategic triad for developing a health care system designed to improve public health in Uzbekistan in the 21st century.

CHAPTER 1.

THE STATUS OF HUMAN DEVELOPMENT IN UZBEKISTAN

...Let us preserve the health granted to us by the Almighty. Only a person in sound health can truly be happy, and only the people and a nation in sound health are capable of great endeavors...

Islam Karimov, President of the Republic of Uzbekistan

People are what constitute the real wealth of nations. Indeed, the basic purpose of development is to enlarge the choices people have. The process of development can expand human capabilities by expanding the choices people have to live full and creative lives. And people are both the beneficiaries of such development and the agents of the progress and change that development brings about. The process of human development must benefit all individuals equitably building upon the participation of each individual. Since the first UNDP Human Development Reports appeared in 1990, UNDP has advocated this approach to development – to human development.

The range of capabilities that individuals can have, and the choices that can help to expand them, are potentially infinite and vary from individual to individual. However, public policy is about setting priorities, and two criteria are helpful in identifying the most important capabilities for assessing meaningful progress in achieving human well-being. The first criterion is that the most important capabilities must be universally valued. The second is that they must be fundamental to life, meaning that their absence would foreclose many other choices. For these reasons UNDP's Human Development Reports focus on four important capabilities: to lead a long and healthy life, to be knowledgeable, to have access to the resources needed for a decent standard of living, and to participate in the life of one's community.

The ideas behind this development paradigm are not new. They are at least as old as Aristotle, who argued: "Wealth clearly is not the good we are seeking for it is merely useful and for the sake of something else." Immanuel Kant similarly asserted that human beings should be seen as ends in themselves, rather than as means to other ends. And similar ideas are found in the writings of Adam Smith, Robert Malthus and John Stuart Mill, to name but a few. But for a long time, development policy debates seemed to forget this simple, yet profound, truth. Caught up with the rise and fall of national incomes, economists often lost sight of the real purpose of development—people's well-being. Economic growth is merely a means—albeit an important one – to achieve that end.

1.1 The current human development situation

The era of globalization has been marked by dramatic advances in technology, trade and investment – and by impressive increase in prosperity. But gains in human development have been less impressive. Large parts of the developing world are being left behind. Human development gaps between rich and poor countries, already large, are widening. Meanwhile, some of the countries most widely cited as examples of globalization "success stories" are finding it harder to convert rising prosperity into human development. Progress is slowing down in reducing child mortality, one of the most basic of human development indicators, while the death gap between rich and poor countries in child mortality is widening.

For all their highly visible achievements, the successes of globalization and scientific advances falls far short of ending unnecessary suffering, debilitating disease and death from preventable illness that blight the lives of the world's poor people. Looking back over the past decade, the long-term trend towards progress in human development has continued. On average, people born in a developing country today can anticipate being wealthier, healthier and better educated than their parents' generation. They are also more likely to live in a multiparty democracy and less likely to be affected by conflict. In little more than a decade, average life expectancy in developing countries increased by two years. Human development in poor countries is catching up with human development in rich countries in terms of life expectancy. Increased life expectancy is partly a product of declining child mortality. Today, there are 2 million fewer child deaths than in 1990, and the chance a child will reach age 5 has increased by about 15%. Improvements in access to water and sanitation have contributed by reducing the threat from infectious diseases. Another 1.2 billion people have gained access to clean water over the past decade. The rapid scaling-up in global immunization since 2001 through the Global Alliance for Vaccines and Immunization has also brought down the death toll, saving an estimated half million lives since then.

Advances in education have been equally impressive. There are still 800 million people in the world lacking basic literacy skills. Disproportionately, two-thirds of those are women. Even so, literacy levels in developing countries have increased from 70% to 76% over the past decade, and the gender gap is narrowing. Illiteracy today reflects past deficits in access to education. Those deficits are shrinking. Compared with the situation in 1990, there are 30 million fewer primary school-age children not attending school, and the average number of years of school attendance has climbed by half a year. The gender gap in primary school enrolment, admittedly a limited indicator for gender equity, has narrowed, though girls still account for more than half of those children not attending school.

Extreme income poverty has been falling. Legitimate concerns have been raised about the use of the US dollar-a-day poverty line to chart cross-country trends—and extreme caution is in order when using this indicator. Measurement problems aside, poverty is a dynamic process that can be captured only in part by using static indicators. But the trend is pointing in a positive direction. Extreme poverty fell from 28% in 1990 to 21% today—a reduction in absolute numbers of about 130 million people. Economic growth is one of the obvious requirements for accelerated income poverty reduction and sustained human development. Here, too, headline news is encouraging. Average per capita income growth in developing countries in the 1990s was 1.5%, almost three times the rate in the 1980s. Since 2000, average per capita income growth in developing countries has increased to 3.4% – double the average in high-income countries. After two decades of declining average income, Sub-Saharan Africa has posted an increase of 1.2% a year since 2000. It is too early to consider this recovery a turning point, but there are encouraging signs that growth may be taking root in a growing number of countries in the region.

The scale of gains in human development registered over the past decade should not be underestimated, nor should they be exaggerated. Part of the problem with global snapshots is that they obscure large variations across and within regions. They also hide differences across dimensions of human development. Progress towards human development has been uneven across and within regions and across different dimensions.

The initial economic decline after the dissolution of the Soviet Union is a major factor in the dismal trends in human development, poverty and inequality in Central Asia. The initial dramatic drop between 1990 and 1996 in economic output and incomes resulted in cumulative losses in measured GDP ranging from

about 20 % in Uzbekistan to almost 70 % in Tajikistan, with intermediate losses of about 40 % in Kazakhstan, 45 % in Kyrgyzstan and 50 % in Turkmenistan. Fortunately, since 1999 all Central Asian economies have experienced relatively high growth rate fueled by a combination of recovery, reforms, high mineral prices and the positive spillover effects of rapid growth in neighboring countries.

People's human development and their security were severely affected by Central Asia's political, economic and social transition. Because Central Asia was home to the poorest and most vulnerable parts of the Soviet Union, the human impact of the Soviet Union's collapse was arguably more severe here in Central Asia than elsewhere. As a result of the economic depression in 1989-1990 accompanying the transition, people's early expectations for improved economic and social conditions were quickly disappointed. During the initial period of independence, from 1991 to 1995, the economic and social indicators for each Central Asian country declined significantly. Poverty and unemployment increased, overall output decreased, and social and education expenditures suffered a drastic drop. As a result of widely varying economic and social policies, human development conditions diverged substantially.

Since 1991, the year a new stage in nation-building was begun; human development has been the core and ultimate objective of Uzbekistan's economic, social, and political reforms. Thanks to the emphasis of the reforms on human development, the heavy socioeconomic blow dealt to the economy and to the entire human development process in Uzbekistan and in all the other former Soviet Republics by the coming collapse in the late 1980s and by the collapse in the early 1990s has gradually been overcome. Socioeconomic reforms in Uzbekistan were accelerated and stepped up in 2005.

What has been accomplished?

To facilitate structural transformation of the industrial sector, to promote the private sector and private investments:

- Corporate taxes were reduced from 18% to 15% and social taxes from 33% to 31% to ease the tax burden on businesses;
- Additional incentives for foreign investors and foreign investment companies were introduced, primarily in investment areas with a surplus labor supply and an inadequately developed industrial sector;
- The Central Bank's refinancing rate was reduced from 18% to 16%, which led to a lowering of the interest rates commercial banks charge on invest-

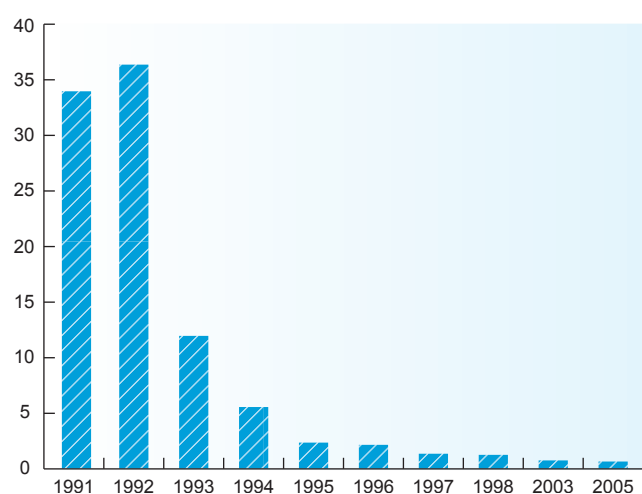
ment loans to businesses;

- Business restructuring and financial revitalization measures encouraging domestic investments in upgrading technical operations were widely implemented. Whereas the Government used to subsidize bankrupt companies through various government support mechanisms, last year the property of bankrupt companies was expressly sold to new owners with greater business skills and new mechanisms of privatization up to selling off sites at zero cost in exchange for investment commitments of investors have been introduced.

To facilitate restructuring of the agricultural sector:

- Agricultural reforms aimed at setting up private farms to replace failing cooperatives (shirkats) have reached a crucial stage. 21,700 new private farms were established in 2005. Uzbekistan's farmers produced 55.4% of the wheat harvest and 66.3% of the cotton harvest. Today government companies producing agricultural output make up less than 1% of the country's farms;
- Infrastructure development for financial services and for supplying raw materials and technical resources for newly established private farms was greatly expanded;
- A system of bank farm loans was introduced using future cotton and wheat harvests as collateral.

Figure 1.1
Changing share of government sector in agricultural output (%)



Source: Ministry of Economy of Republic of Uzbekistan

To accelerate the development of the economy's private sector:

- Taxes of micro- and small businesses were consolidated and reduced;
- Financial reporting by small businesses to tax authorities was reduced by a factor of 10 to 12 times;

- A package of government decisions was adopted with the objective of enhancing guarantees private sector activities. The principle of the presumption of innocence of businesses was introduced: oversight bodies bringing charges of business violations may prove those charges only in court proceedings;
- Inspection functions of government bodies were radically reduced and limits were placed on their authority to conduct inspections and on the frequency with which inspections may be conducted.

Announcement of these decisions and their implementation serve as a means of informing the business community of progress in economic reforms. Cooperation between the country's leadership and the business community as well as donor support from developed countries and international financial institutions aimed at improving the business environment are prerequisites for Uzbekistan's stable development.

Within the framework of social reforms:

- Reforms in the housing and utilities sectors were accelerated to enhance homeowner rights in management of homes, to introduce modern utilities metering devices and to enhance the quality of services;
- 68.4 billion soums (USD 61.4 million) from the government budget and from specifically created non-budget funds were earmarked for the newly launched School Education Development Programme;
- 213 billion soums (USD 191.2 million) were earmarked for continuing the National Human Resources Training Programme designed to create and enhance secondary vocational education;
- 361.9 billion soums (USD 324.9 million) were earmarked for healthcare development, up by 30.4% compared with 2004;
- 185.5 billion soums (USD 167 million) were earmarked for the State Year of Health Programme, 22% of which came from government budget funds, and as a result a set of activities geared to foster healthy lifestyles were implemented;
- 115 new sports facilities were built to develop children's sports, 83% of which were in rural areas, making it possible for 36.4% of children between the ages of 6 and 17 to engage in regular athletic and sports activities.

What Are the Major Outcomes?

Macroeconomic Indicators:

- In 2005, the second year in a row that high growth of GDP was achieved, growth of GDP was 7%. It met target indicators set earlier in the year and is significantly higher than IMF and World Bank projections;
- The economy has maintained external and internal balance: the government budget was implemented with a surplus; the inflation rate stood at 7.8% -- in line with projected indicators; the foreign trade balance yielded a current accounts surplus in excess of USD 1.3 billion; gold and hard currency reserves grew rapidly.
- The amount of capital investments in the economy grew by 7%, construction work increased by 7.8%, and foreign direct investments grew by 140%.
- Agricultural output grew by 6.2%; the cotton harvest was the biggest in 15 years.

In 2005 the share of total industrial output contributed by small businesses was 9.8%, while the share of total industrial output contributed by agriculture was 84.7%. Small businesses accounted for 22.1% of investments in fixed assets.

Incentives introduced to encourage small business development created 434,200 new jobs in 2005, 110.6% of the number of new jobs created in 2004. The share of small business employment grew from 60.3% of the total workforce in 2004 to 65.5% in 2005. Income from entrepreneurial activities is becoming an increasingly substantial portion of the population's income.

Social Indicators:

- 511,000 new jobs were created and employment in the economy grew by 2.9%.
- Social infrastructure was further developed: 6,033,200 sq. m. of living space, clinics for 13,490 visits, academic high schools for 6,840 students, vocational colleges for 65,600 students, basic educational schools for 126,300 pupils, natural gas networks with a total length of 3,167.7 km, and a 2,400.1 km drinking water network were commissioned.

The objective of Uzbekistan's welfare policy is to ensure equitable access to quality social services and to provide government guarantees that the poor have access to them. And also:

- Elaborate strong welfare policy;
- Ensure equal access to education;
- Facilitate unhindered access of poor families to healthcare services;
- Facilitate equitable access to clean drinking water, sanitation and energy sources;
- Promote employment and sources of sustainable income;
- Target welfare support for vulnerable groups.

Table 1.1

Main Macroeconomic Indicators of Economic Development in Year 2005 (% annual change)

Indicators	2004	2005
GDP growth	7.7	7.0
Growth in industrial output	9.4	7.3
Growth in agricultural output	10.1	6.2
Growth in investments	5.2	7.0
Growth in volume of construction works	3.6	7.8
Growth in exports	30.3	11.5
Inflation rate (as of December)	3.7	7.8
Current account balance, USD mln.	1 037	1 317.5

Source: Ministry of Economy of Republic of Uzbekistan

Box 1.1

IMF assessment of Uzbek reforms

- Uzbekistan's economic indicators remained robust in 2005 following high economic indicators in 2004;
- Foreign economic sector indicators remain high;
- Thanks to an excellent cotton harvest, to the favorable prices Uzbekistan's major export items commanded and to the sharp increase in money transfers, a current accounts surplus is expected;
- Given the significant liberalization of fiscal policy provided for in the 2005 state budget, the consolidated state budget was generally balanced thanks to lower expenditures;
- Despite growing government deposits in the banking system, the growth rates of monetary aggregates continued to increase throughout 2005. Growth in monetary reserves reflected increased currency holdings. The Central Bank of Uzbekistan's net internal assets were lower in comparison with its net internal assets at the end of 2004;
- The money supply grew due to an increase in net foreign assets and, to a lesser extent, to increasing credits granted to the non-state sector, particularly bank loans to farmers begun in 2005;
- Some progress was achieved in conducting structural reforms;
- Procedures for licensing, inspections, and registration of certain types of activities were simplified and statistical reporting streamlined;
- Farm restructuring and sales of state assets and shares are in progress;
- The decision to ease limitations on cash by granting commercial banks unlimited access to their correspondent accounts in the Central Bank of Uzbekistan is a welcome one.
- Official actions taken to keep the budget deficit in 2005 at a lower than targeted rate by reducing expenditures and preventing any arrears in payments are supported;
- Tax reforms begun in 2005 are welcome, plans of officials to draft a comprehensive tax code are supported and notable progress was made in drafting the Treasury Modernization Project.

(Excerpts from IMF Memorandum dated December 9, 2005)

Box 1.2

Legislative Acts Adopted in 2005 to Support the Private Sector.

January 2005 – Drafting the New Tax Code of Direct Action (Resolution № R-2108 of the President of Uzbekistan, On Developing a New Revision of the Tax Code of the Republic of Uzbekistan, issued January 7, 2005)

March 2005 – Programmes for implementation of the Objectives and Targets for Reform and Modernization of the Country – (Resolution № PP-24 of the President of Uzbekistan, On the Programme for Implementation of the Goals and Objectives of Democratization and Rejuvenation of Society, Reforming and Modernizing the Country, issued March 10, 2005)

April 2005 – Further Reforms and Liberalization of the Banking System (Resolution № PP-56 of the President of the Republic of Uzbekistan, On Measures for Further Reform and Liberalization of the Banking System, issued April 15, 2005)

June 2005 – Improvement of Legal Safeguards for Business Entities (Decree No. UP-3619 of the President of the Republic of Uzbekistan, On Measures for Further Improvement of the Legal Safeguards for Business Entities, issued June 14, 2005)

June 2005 – Introduction of a Single Tax Payment for Small Businesses to Replace the Single Tax and a Number of Fees (Decree UP-3620 of the President of the Republic of Uzbekistan, On additional Measures to Encourage Development of Micro-firms and Small Businesses, issued June 20, 2005)

June 2005 – Reduction of the Amounts of Financial Penalties and Their Enforcement for Minor First-Time Unintentional Offences (Decree № UP-3622 of the President of the Republic of Uzbekistan, On Liberalization of Financial Liability of Business Entities for Economic Offences, issued June 24, 2005)

June 2005 – Streamlining the System of Reporting and Estimates for Business Entities (Resolution № PP-100 of the President of the Republic of Uzbekistan, On Improving the System of Reporting for Business Entities and Increasing Liability for Illegal Demands for Reporting, issued June 15, 2005)

August 2005 – Guaranteed Unhindered Access to Cash in Bank Accounts (Resolution №PP-147 of the President of the Republic of Uzbekistan, On Guarantees of Unhindered Cash Withdrawals from Bank Deposits, issued August 5, 2005)

September 2005 -- On the Reduction of Certain Permit Procedures and Introduction of Unlimited Licensing for Certain Activities (Resolution № PP-186 of the President of the Republic of Uzbekistan, On Reducing the Number of Types of Permits and Streamlining Permit Procedures for Business Activities, issued September 21, 2005)

October 2005 – On Further Reductions of Inspections (Decree №UP-3665 of the President of the Republic of Uzbekistan, On Measures for Further Reduction and Improvement of the Business Inspections System, issued October 5, 2005)

Figure 1.2
Small business share of GDP (%)

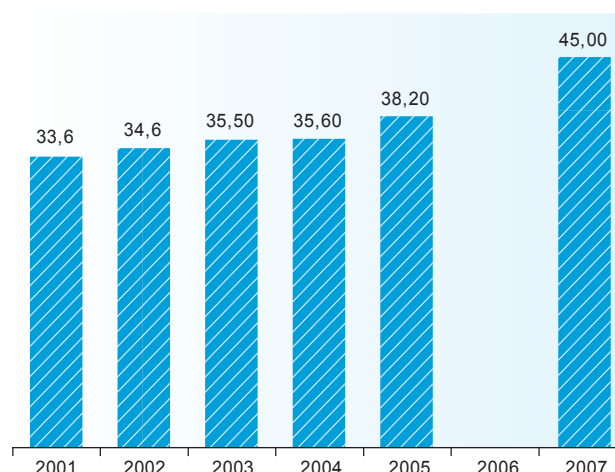
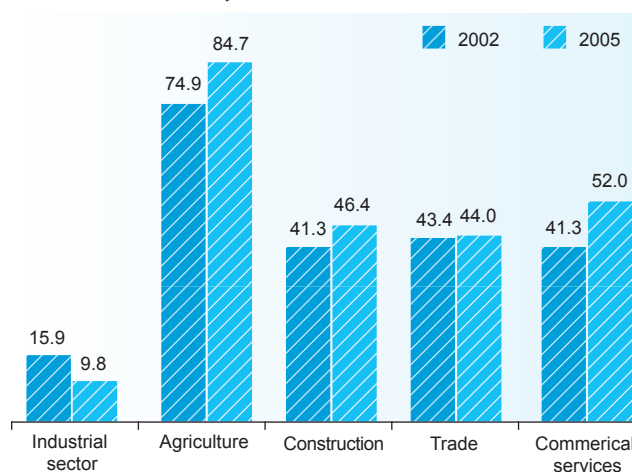
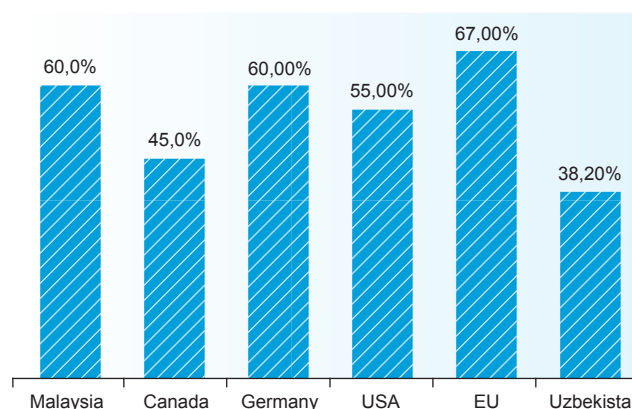


Figure 1.3
Changes in small business share of output by sector of Uzbek economy



Source: Ministry of Economy of Republic of Uzbekistan

Figure 1.4
Small business share of GDP of some countries



Box 1.3

Ten major steps in the direction of private businesses

In the last 2-3 years, thanks to measures taken by the President of the Republic to create a favorable business environment, to support the development of and create incentives for business activities:

1. A streamlined and transparent state registration mechanism and procedures for issuing permits and other documents needed for business activities following registration were introduced;
2. Essential prerequisites were put in place for business finance, inter alia, various modern forms of business loans were introduced and the non-bank credit sector for legal entities and individuals was expanded;
3. Access of small businesses to materials and technical resources, including monopoly products, was facilitated, inter alia, by market mechanisms for the sale of high(ly) liquid(ity) products, and raw materials. Resources were introduced by establishing a single system of electronic bidding in all provinces of the Republic to provide equal access to the resources of all companies regardless of their form of ownership. Special auctions to sell materials and technical resources to business entities were conducted regularly;
4. The system of mandatory standardization and certification of industrially manufactured products was significantly simplified and liberalized;
5. Comprehensive efforts were made to further liberalize and develop the retail and wholesale trade system;
6. The business reporting system was simplified; the number of required financial, tax, and statistical reports was reduced significantly; a quarterly reporting system for taxes, fees, deductions, and other payments was introduced;
7. To facilitate further small business development, SME taxation was streamlined; the tax burden was reduced by introduction of a single tax payment to replace the single tax;
8. Mandatory payments to the non-budget Pension Fund, the Republican Road Fund, and the School Education Fund; The approach of inspection bodies to inspections and monitoring of small businesses was changed: responsibility of oversight body officials for strict implementation of legislation on government oversight of business entities was beefed up; an effective system for the protection of the rights and legitimate interests of business entities was implemented;
9. The approach to assessing violations by business entities was changed: the presumption of innocence was introduced; the scope of law enforcement was substantially reduced; amounts of financial penalties were reduced; the mechanism of fines for minor first-time unintentional offences committed by business entities was;
10. A human resources training system for small and medium businesses was initiated.

Measuring Human Development

It is easier to measure national incomes than human development. And many economists would argue that national income is a good indicator of human well-being. Although clearly there is a strong relationship between human development and economic growth and levels of national income, inasmuch as economic growth is an important factor in human development, human outcomes do not depend on them alone. They also depend on how resources are used—for developing weapons versus producing food, building palaces versus providing clean water. And human outcomes such as literacy for all citizens or equal rights for men and women do not depend on incomes alone.

For these reasons, governments compile an extensive set of indicators of important human outcomes achieved in their country, such as life expectancy at birth and child mortality rates for children under five, which reflect the capability to survive, or literacy rates, which reflect the capability to learn. They also include indicators of important means for achieving capabilities such as access to clean water, and for achieving equitability to eliminate gaps between men and women in education and political participation.

While this rich array of indicators provides measures for evaluating progress in many dimensions of human development, policymakers also need a measure for evaluating overall progress, particularly one whose main focus is on human well-being rather than on income. For this purpose Human Development Reports has published since its inception the Human Development Index, later complemented by indices addressing gender (gender related development index and gender empowerment measure) and poverty (human poverty index) specifically. These indices give an overview of some basic dimensions of human development, but the data underlying the indices and other indicators must be looked at in conjunction with the indices.

The Human Development Index

The Human Development Index (HDI) focuses on three measurable dimensions of human development: living a long and healthy life, obtaining an education, and having a decent standard of living. It thereby combines measures of life expectancy, school enrolment, literacy and income to provide a broader view of a country's development than income alone does.

Although the HDI is a useful starting point, it is important to remember that the concept of human development is much broader and more complex than any summary measure can capture, even when supplemented by other indices.

The HDI is not a comprehensive measure. It does not include some important aspects of human development, notably the ability to participate in the decisions that affect one's life and to enjoy the respect of others in the community. People can be rich, healthy and well educated, but if they are unable to participate fully in their community, their human development is not complete. The omission of this dimension of human development from the HDI was pointed out when the first Human Development Report appeared.

The HDI clearly illustrates the distinction between income and human well-being. By measuring average achievements in health, education and income, the HDI is able to give a more complete picture of the state of a country's development than incomes alone can.

Box 1.4

Calculating The Human Development Index (HDI)

The HDI is a summary measure of human development. It measures a country's average achievements in three basic dimensions of human development:

A long and healthy life, as measured by life expectancy at birth.

Knowledge, as measured by the adult literacy rate (with two-thirds weight) and the combined primary, secondary and tertiary gross enrolment ratio (with one-third weight).

A decent standard of living, as measured by GDP per capita.

Before the HDI can be calculated, an index must be created for each of its dimensions. To calculate those dimension indices — life expectancy, education, and GDP—minimum and maximum values (goal posts) are chosen for each underlying indicator.

Performance in each dimension is expressed as a value between 0 and 1 by applying the following general formula:

Dimension index = (actual value – minimum value) / (maximum value – minimum value)

The HDI is then calculated as a simple average of the dimension indices.

Trends in human development

During the 20th century dramatic unprecedented progress in human development was made. Between 1960 and 2000 life expectancy in developing countries increased from 46 to 63 years. Mortality rates for children under five were more than halved. The illiteracy rate was nearly halved between 1975 – when one out of every two adults could not read – and 2000. Real per capita income more than doubled, from \$2,000 to \$4,200. But despite such impressive progress, massive human deprivation remains. More than 800 million people suffer from undernourishment. Some 100 million children, 60 million of whom are girls, who should be in school are not. More than a billion people survive on less than 1 dollar a day. Some 1.8

billion people live in countries whose political regimes do not fully accommodate democratic, political and civil freedoms. And about 900 million people face discrimination because of the ethnic, religious, racial or linguistic group they belong to.

Over the last decade the HDI has been rising across all developing regions, though at variable rates and with the obvious exception of Sub-Saharan Africa. Amid this overall progress, however, many countries suffered unprecedented declines in HDI scores. Eighteen countries with a combined population of 460 million people scored lower on the HDI

in 2003 than they did in 1990. These reversals have been heavily concentrated in two regions. Twelve of the countries with reversals are in Sub-Saharan Africa. Just over one-third of Sub-Saharan Africa's population—240 million people—live in countries that have suffered an HDI reversal. The former Soviet Union accounts for the other six countries in which the HDI slid backwards. HDI reversals are reflected in the relative HDI ranking of countries. In Sub-Saharan Africa the lethal interaction of economic stagnation, slow progress in education and the spread of HIV/AIDS has produced a free fall in HDI ranking. Southern Africa accounts for some of the steepest declines—a fall of 35 places for South Africa, 23 places for Zimbabwe and 21 places for Botswana. Of the countries of the former Soviet Union the biggest declines were in Tajikistan, which fell 21 places; Ukraine, 17 places; and the Russian Federation, 15 places. The economic disruption that followed the disintegration of the Soviet Union has been one of the two factors fueling the decline in HDI ranking. The other is the catastrophic decrease in life expectancy in Russia between 1990 and 2003 when its world ranking in terms of life expectancy plunged 48 places.

The Human Development Index for Uzbekistan

Positive socioeconomic development in 2005 enabled Uzbekistan to sustain trends in the growth of its HDI. Educational reforms extended the length of time spent in school and literacy rates, already quite high, remain high. Life expectancy at birth increased by 0.9 of a year to 72.5 years.

Uzbekistan, which provides full access to primary and secondary education, has high educational development indicators. And its life expectancy indicators come very close to those of countries with a high HDI. However, what keeps Uzbekistan from being added to the list of countries with a high HDI is its low per capita GDP.

However, a high HDI does not always reflect the human development level of the entire population.

That is because approximated GDP per capita indicator, used in composite HDI indicator, does not reflect the poverty rate and depth of its spread, inequitable income distribution or the unemployment rate. These indicators may in actual fact substantially change the overall picture of human development. For instance, countries with the same or similar GDP per capita may be radically different in terms of poverty rate income distribution and social harmony within the society even though the HDI as a simplistic composite indicator would rank them close to each other. Due to its schematic and limited nature, the HDI cannot reflect all the positive and negative trends in human potential development.

Educational indicators used in composite GDP indicators reveal little about the educational quality or about the public's level of educational attainment, and nothing about the moral and character values imparted by education.

The HDI life expectancy indicator says nothing about the quality of life per se. Furthermore, it is made up of factors which change slowly in response to implemented reforms. Such factors include largely inherited natural and environmental conditions of habitat, which, for instance, in deserts or regions of the far north are substantially worse than in other regions, as well as genetically transmitted longevity passed on from generation to generation over long periods of time, etc.

In analyzing Uzbekistan's HDI compared with that of other countries, it would first appear that what Uzbekistan needs to do is redirect financial resources

and focus them primarily on economic development because where Uzbekistan lags most significantly behind the world's developed countries is in per capita GDP. Furthermore, making significant improvements in Uzbekistan's educational development and life expectancy indicators, already quite high compared with those of other countries, is more difficult because of the major financial commitments that would be needed to make both quantitative and qualitative improvements to do so.

Besides, such a lop-sided policy would run completely counter not only to Uzbekistan's philosophy and concept of human development but also to its practical needs. For Uzbekistan, growth in GDP is a step-wise process of great potential and its implementation is very much bound up with the economic reforms now underway. What is more, there are all sorts of other factors that impact economic growth directly. Public health and education are among those factors.

The philosophical cornerstone of the concept of human development is that everyone – regardless of gender, age, background, nationality, religious affiliation – be afforded the right to choose from a wide range of opportunities to enable them to live a long and healthy life, acquire knowledge, have access to the resources essential for a decent living standard, and to enable them take part in the life of their community.

The concept of human development combines two seemingly opposite components of human development – moral and material. Throughout the entire evolution of human development, as history shows, the moral and the material components of human

Table 1.2
Human Capacity Development Index for Uzbekistan

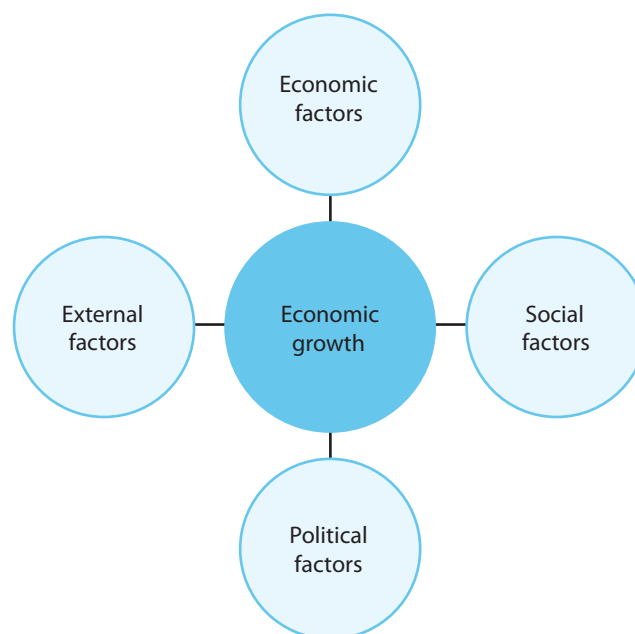
Indicators	1995	2000	2001	2002	2003	2004
Life expectancy at birth (in years)	69,1	70,8	71,3	71,2	71,6	72,5
Adult literacy rate (% of population)	98,96	99,17	99,18	99,19	99,20	99,31
Number of years of education completed	11,4	11,4	11,5	11,6	11,6	11,7
Literacy indicator	0,990	0,992	0,992	0,992	0,992	0,993
Learning indicator	0,76	0,76	0,77	0,77	0,77	0,77
Educational level	2,74	2,74	2,74	2,74	2,76	2,75
Real GDP per capita (PPP in USD)	1973	2422	2460	2578,5	2668,1	2834,8
Life expectancy index	0,735	0,763	0,772	0,770	0,777	0,792
Index of educational level achieved	0,913	0,913	0,913	0,913	0,917	0,917
GDP index	0,498	0,532	0,535	0,542	0,548	0,558
Indicator of human capacity development index (HCDI)	0,715	0,736	0,740	0,742	0,747	0,756
Gender related development index (GRDI)	0,704	0,733	0,736	0,738	0,743	0,752
Indicator of women's empowerment (IWE)	0,351	0,382	0,378	0,380	0,411	0,468

existence have been in unrelenting competition to win out over one another. And yet, human society has known peace, harmony, and enjoyed the prerequisites for public progress only when these two components have been in balance, in equilibrium, and of equal influence.

Pursuit of material gain at the expense of rich moral development not only impoverishes human life but also jeopardizes its sustainability. It is difficult to imagine leading a fulfilling life of well-being without education or good health. On the other hand, education and health, and a society's world outlook and moral health are related in important ways to, and depend on, public welfare. Poverty breeds not only an unhealthy lifestyle but also a sense of frustration and aggressive feelings that can culminate in social and military conflict.

The main objective of human development is to create an environment that politically, economically, socially, culturally, and ecologically is conducive to promoting the public welfare while providing everyone with the opportunity to enjoy a long, healthy and productive life.

This report is devoted to the multifaceted problems bearing on the interrelationship between health and the development of human potential.



Box 1.5

Computation of Uzbekistan's HDI for 2003

Below is a step-by-step calculation of Uzbekistan's 2003 HDI using 2003 data available in the statistical tables of the 2005 Human Development Report.

1. Calculating the Life Expectancy Index

The life expectancy index measures a country's relative achievement in life expectancy at birth. In 2003 life expectancy at birth was 66.5 years in Uzbekistan. The maximum and minimum global values for life expectancy at birth are 85 and 25, respectively.

$$\text{Life Expectancy Index} = (66.5 - 25) / (85 - 25) = 0.69$$

2. Calculating the Education Index

The education index measures a country's relative achievement in adult literacy as well as primary, secondary and tertiary gross enrolments combined. The adult literacy index and the gross enrolments index are calculated first. Then those indices are combined to produce the education index, with two-thirds weight given to adult literacy and one-third weight to the combined gross enrolments index. In 2003 the adult literacy index in Uzbekistan was 99.3% and for the 2002/03 school year the combined gross enrolments index was 76%. The maximum and minimum global values for adult literacy are 100 and 0, respectively. The same maximum and minimum global values apply for combined gross enrolments.

$$\begin{aligned} \text{Adult Literacy Index} &= (99.3 - 0) / (100 - 0) = 0.993 \\ \text{Gross Enrolment Index} &= (76 - 0) / (100 - 0) = 0.760 \\ \text{Education Index} &= 2/3 \text{ of } 0.993 + 1/3 \text{ of } 0.760 = 0.91 \end{aligned}$$

3. Calculating the GDP index

The GDP index is calculated using adjusted GDP per capita ppp. In the HDI, income serves as a surrogate for all the dimensions of human development not reflected in a long and healthy life and in knowledge. Income is adjusted by using the logarithm of income because achieving an acceptable level of human development does not require unlimited income. In 2003 GDP per capita in Uzbekistan was \$1,744 ppp. The maximum and minimum global values for GDP per capita ppp are \$40,000 and \$100, respectively.

$$\text{GDP Index} = [\log(1,744) - \log(100)] / [\log(40,000) - \log(100)] = 0.48$$

4. Calculating the HDI

Now that the three constituent indices of HDI have been calculated, determining the HDI is simply a matter of averaging the three indices.

$$\text{HDI} = 1/3 \text{ of } 0.69 \text{ (Life Expectancy Index)} + 1/3 \text{ of } 0.91 \text{ (Education Index)} + 1/3 \text{ of } 0.48 \text{ (GDP Index)} = 0.694.$$

Box 1.6

Main Goals of the State Year of Health Programme

1. Generate a life-based philosophy among the public oriented to the right and a responsible approach to safeguarding one's health and a healthy lifestyle culture.
2. Improve the protection of maternity, childhood, and reproductive health; enhance healthcare culture and family rejuvenation.
3. Make a healthy and decent life available for the elderly; enhance the health of retirees, disabled persons, and people with special needs.
4. Prevent socially hazardous diseases.
5. Further develop the health care system, enhance its material and technical infrastructure, ensure accessible and timely medical assistance, train medical staff.
6. Provide quality drinking water and healthy living conditions and safeguard the environment for the public.
7. Promote physical fitness among the public at large to involve children, women, and families in sports.

1.2 Health as a Key Prerequisite for Human Development

What is health? The existence and survival of the human race as a biological species depend on health status. It is no coincidence that health is a key factor in human potential development, because without health the human race would be threatened with extinction.

Human health depends on many factors, the major ones of which are:

- An individual's inherited biological, psychological, and inherited features;
- Natural surroundings (climate, weather, plants, animals, etc.)
- State of the environment (pollution from chemical and biological agents, etc.)
- Socioeconomic, political, and other factors with an impact on work and living conditions; and
- State of health care services.

Human health is defined not only by the existence or lack of illness or physical defects. The World Health Organization (WHO) defines human health as the state of full physical, spiritual, social well-being when organs and systems of the human body are balanced with surrounding social environment.

The definition of health consists of three components – physical, mental, and social.

Physical health – is the natural state of an organism

when all of its organs and systems are functioning normally.

Mental health is determined by the extent to which the quality of thinking, attention span, memory, emotional stability, and will power are developed.

Social health is considered to be the highest stage of human health and determined by moral principles, which constitute the core of human social life, i.e. an individual's activities in a particular human community.

Health and society. Health is not a commodity and has no market price. Personal health is invaluable to human beings. Maintaining, improving, and restoring health require substantial material and financial resources closely bound up with the state of a country's economy.

Health is a socioeconomic category as shown by the following points::

1. Public health, or the collective health of all citizens, constitutes a strategic goal of the state and is prerequisite for national security. History is replete with cases of the disappearance of entire nations brought on by sharp reductions in population, epidemics, low birth rates, and high mortality.
2. Health is an economic resource for a society and a major prerequisite for capacity building. Only a healthy and educated population can achieve economic and scientific progress. Health is vital for any nation, particularly in the highly competitive modern world.
3. Maintaining public health requires substantial economic resources, both public and private funds, directly linking public health status with a society's economic development. An affluent society can afford to allocate more funds to support and enhance public health.
4. Health, as an indicator of standard of living, lifestyle, and quality of life, correlates very closely with human development goals.

Health and poverty. The quality of public health and the spread of poverty are very closely related. Countries with an underdeveloped economy, as a rule, have fewer opportunities for socioeconomic development and public health care system improvement. Mortality rates in such countries are higher while the standard of living is lower. Life expectancy in underdeveloped economies is usually low.

Likewise, inadequate public health poses a serious hindrance to a country's economic growth. Only a healthy population is able to work in a highly efficient and creative manner. A healthy population leading healthy lifestyles expends fewer private and public

funds on health care. Members of poor families fall sick more often and spend more money on treatment and thus become even poorer.

The vicious cycle of poor health and low income may be broken only with government support. A government can help poor families improve their health by creating a system offering broad access to health-care. Health improvement is a prerequisite for a more productive labor force and improves its chances of breaking out of poverty. Advocating a healthy lifestyle should be the next step after direct government support to enable people not only to reduce expenses

for maintaining and improving their health but also ensuring different standards of living and labor.

In the meantime, there is not always a direct link between poverty and health. High income individuals earn from running businesses or from high income jobs are often under serious psychological stress which negatively impacts their health. For instance, according to budget surveys in Uzbekistan in 2005, household members whose incomes were in the highest quintile complained of health problems and grave chronic illnesses 3.5 times more frequently than members of the poorest households.

Table 1.3

Budget surveys of health and income in Uzbekistan (% of adults per household, 2005)

Income Groups	Has not experienced or experienced only temporary health problems		Has always experienced health problems and has major chronic illness	
	2002	2005	2002	2005
First quintile (low income households)	95,4	97,0	3,5	2,2
Fifth quintile (high households)	88,7	91,7	10,4	7,7

Source: budget survey data of State Statistics Committee of Uzbekistan

Table 1.4

Budget surveys of health and employment in Uzbekistan (% of adults in household, 2005)

Employment status of the head of the household	Has not experienced or experienced only temporary health problems	Has always experienced health problems and has major chronic ailment
Unemployed	93,6	5,9
Employed	97,6	2,2
Including		
Full time	97,5	2,2
Temporary	6,5	2,7
Seasonal	8,2	1,4
Other	97,6	2,4

Source: budget survey data of State Statistics Committee of Uzbekistan

Table 1.5

Budget surveys of health and education in Uzbekistan (% of adults in household, 2005)

Educational status of head of household	Has not experienced or experienced only temporary health problems	Has always experienced health problems and has major chronic ailment
Primary and lower	91,9	8,1
Incomplete secondary	92,9	6,9
General secondary	97,1	2,5
Specialized secondary	95,7	4,0
Incomplete university degree	94,7	4,7
University degree	94,8	1,4

Source: budget survey data of State Statistics Committee of Uzbekistan

Health and employment. Access to employment is an important factor in the economic welfare of the population. Ability to work and improve one's own financial well-being from the income one earns is related not only to a country's economic potential and rate of economic development but also to public health and to the health of individual citizens.

First, individuals in poor physical health or with physical defects often encounter natural limitations on what work they can choose as well as restrictions imposed by employers who prefer to employ the physically fit. Quite often, people in poor health cannot find work at all or get low paying jobs.

Secondly, workers in poor health face difficulties in performing their job responsibilities, they fall ill more frequently; hence their work productivity is lower and subsequently they receive lower pay.

Health and education. Educational level has a direct impact on a person's outlook on health. Educated people take better care of themselves, take preventive measures, lead a healthy lifestyle, recognize illness in time and seek qualified medical assistance. A better educated public has better employment opportunities with decent incomes and as a result has access to timely and quality medical services.

Health and living conditions. The state of the environment and living conditions have a direct impact on public health. Deteriorating environmental conditions may impact not only the health of present generations but also undermine that of future generations by causing genetic diseases.

Many congenital diseases, pathologies, and physical underdevelopment of newborns are related to deteriorating environmental conditions. According to research in Uzbekistan, there are 89 critical environmental situations, 22 emergency environmental situations and one environmental catastrophe zone in Uzbekistan's 217 districts and towns. The Republic of Karakalpakstan faces the worst environmental conditions. There are also pockets of acute environmental distress in the Khorezm, Navoi, and Ferghana regions.

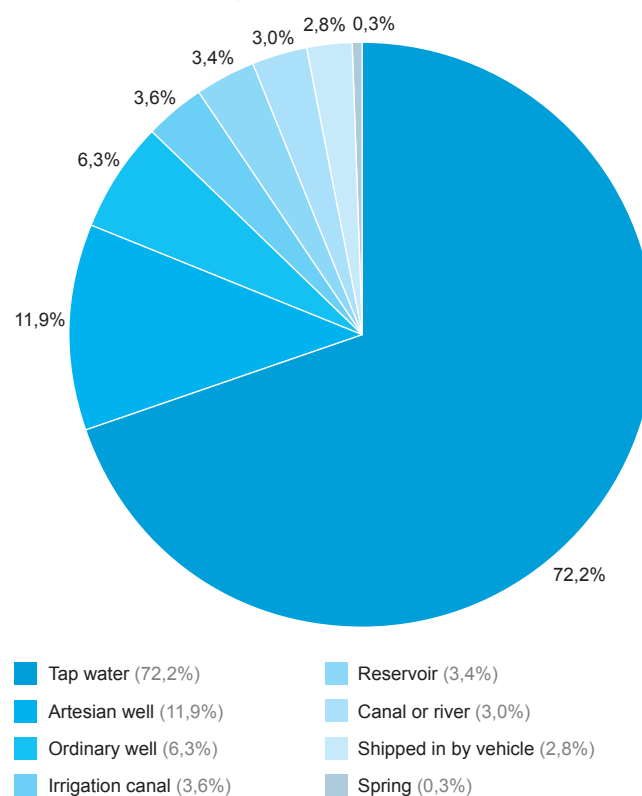
In order to preserve and improve the state of the environment in Uzbekistan, a solid legislative framework has been created whereby the Cabinet of Ministers is endeavoring to regulate environmental affairs through 27 laws and 46 resolutions. A special foundation for the protection of the Aral Sea Basin's communities has been created.

In line with target 10 under the National Millennium Development Goals, both the Government and international donors are concentrating on providing all rural and urban communities with safe drinking water.

A wide-scale government programme is being implemented using government budget funds and international financial institution and donor funds to expand public access to clean drinking water. It make possible to facilitate the access of prevailing majority of people to clean water.

Health and life expectancy. One of the three HDI indicators is life expectancy. The direct positive link between health and life expectancy is clear: sound public health is reflected in high life expectancy. Major calamities, such as the collapse of the Soviet Union, cause significant dislocations in the lives of the people, and accordingly longevity in most CIS nations declined throughout the 1990s.

Figure 1.5 Sources of drinking water in Uzbekistan (%)



Source: Data of sociological survey "Uzbekistan's youth: social self-awareness and values of life", June 13-30, 2005. Ijtimoiy Fikr Public Center.

CHAPTER 2.

HEALTH AND THE MILLENNIUM DEVELOPMENT GOALS

2.1 Efforts to Achieve the MDG in Uzbekistan

Leaders of 189 nations signed the Millennium Declaration in September 2000, projecting a general vision of a peaceful, prosperous, and equitable world.

The Millennium Declaration defines a comprehensive set of commitments for decent conditions for all people. It is an opportunity for governments to join efforts in combating poverty, improving access to major social services, reducing the spread of illnesses and improving the environment.

The Millennium Declaration developed a global agenda for the 21st century and set forth action-oriented goals known as the Millennium Development Goals (MDGs). The eight MDGs and their associated targets provide nations with a clearly drawn roadmap for improving living conditions by 2015.

The Millennium Declaration's first seven goals are designed to reduce poverty in all forms: this includes fighting hunger, increasing income, and improving access to and raising the quality of education and health services, gender equality, and improving the state of the environment. Such a comprehensive approach should ensure sharp poverty reduction in every country all over the world.

Goal 8 provides the means to achieve the first seven and calls upon developed countries to take action to further reduce the debt of poor countries and to contribute to the development of low-income countries.

Although the achievement of the Millennium Development Goals is a global project covering countries all over the world, it is vitally important to adapt MDGs and targets to each country's unique character, circumstances growing out of its historical past, and opportunities.

As a signatory to the Millennium Declaration, Uzbekistan has made significant strides to meet its MDG commitments. The Government of Uzbekistan realizes the urgency of these commitments and their relationship to its national development.

Concurrently with development of national programs to meet MDGs, the Government of the Republic of Uzbekistan, in collaboration with the ADB, UN, and

World Bank, has formulated its Welfare Improvement Strategy (WIS) Programme for 2005-2010 whose priorities are closely linked to Uzbekistan's national MDGs.

The understanding of the necessity to integrate Uzbekistan's human development policy with its economic development programme is a conceptual underpinning of and prerequisite for the development of Uzbekistan's Welfare Improvement Strategy Programme.

An integrated socioeconomic development programme should ensure equitable distribution of the outcomes of economic growth among all social groups, equal access of socially vulnerable groups to resources, as well as ensure protection from economic discrimination of any kind – geographical, gender-based, income, etc.

Uzbekistan's strategy focuses on human interests thereby broadly involving all stakeholders and institutions in the process of the strategy's development, implementation, and monitoring.

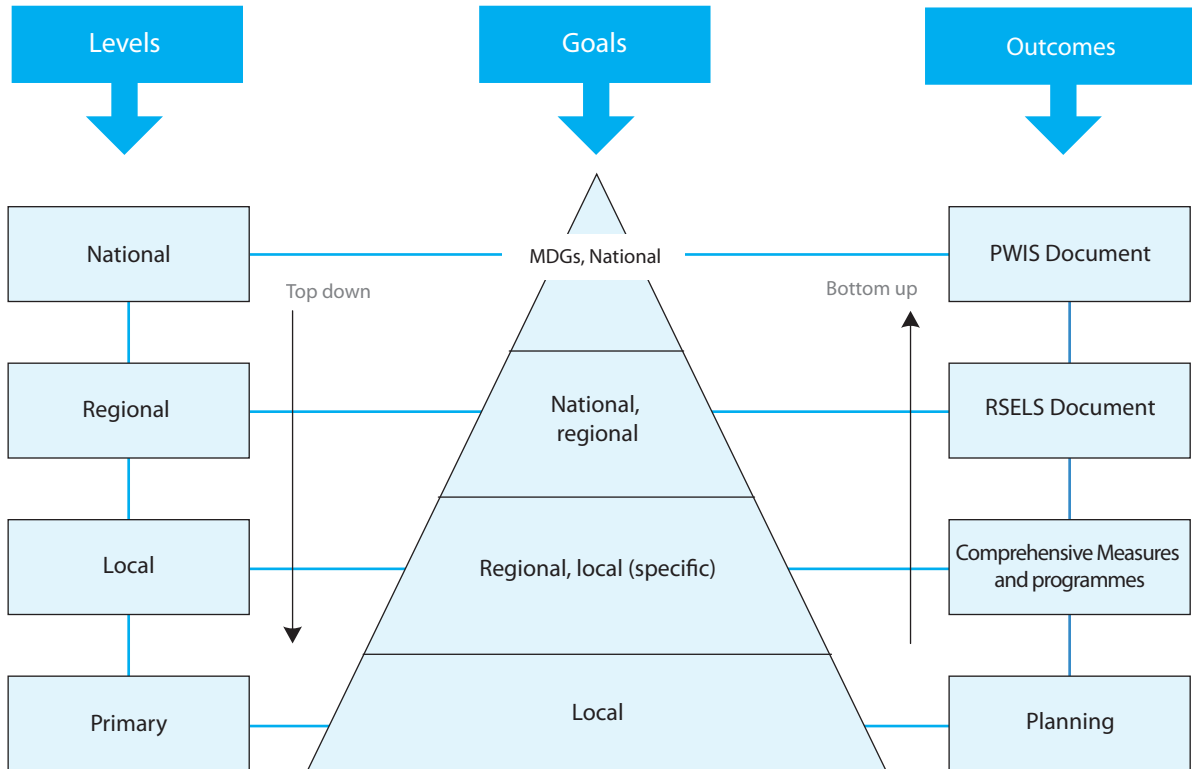
The Strategy will improve living standards by increasing people's incomes, increase consumption, improve the educational and health care systems, improve welfare, public utilities, the environment and access to information.

Major objectives of the Strategy include:

1. Enhance living standards and cut poverty in half by 2015, which would satisfy MDG No 1 completely;
2. Guarantee equal access to basic education, which is a main priority identified in the educational sector;
3. Achieve gender equality and empower women as a cross-cutting issue in all sections of the Strategy;
4. Improve the welfare of mothers and children, reduce the prevalence of TB and HIV/AIDS; and
5. Promote environmentally sound sustainable growth.

Components of Welfare Improvement Strategy

Architecture of Uzbekistan's WIS

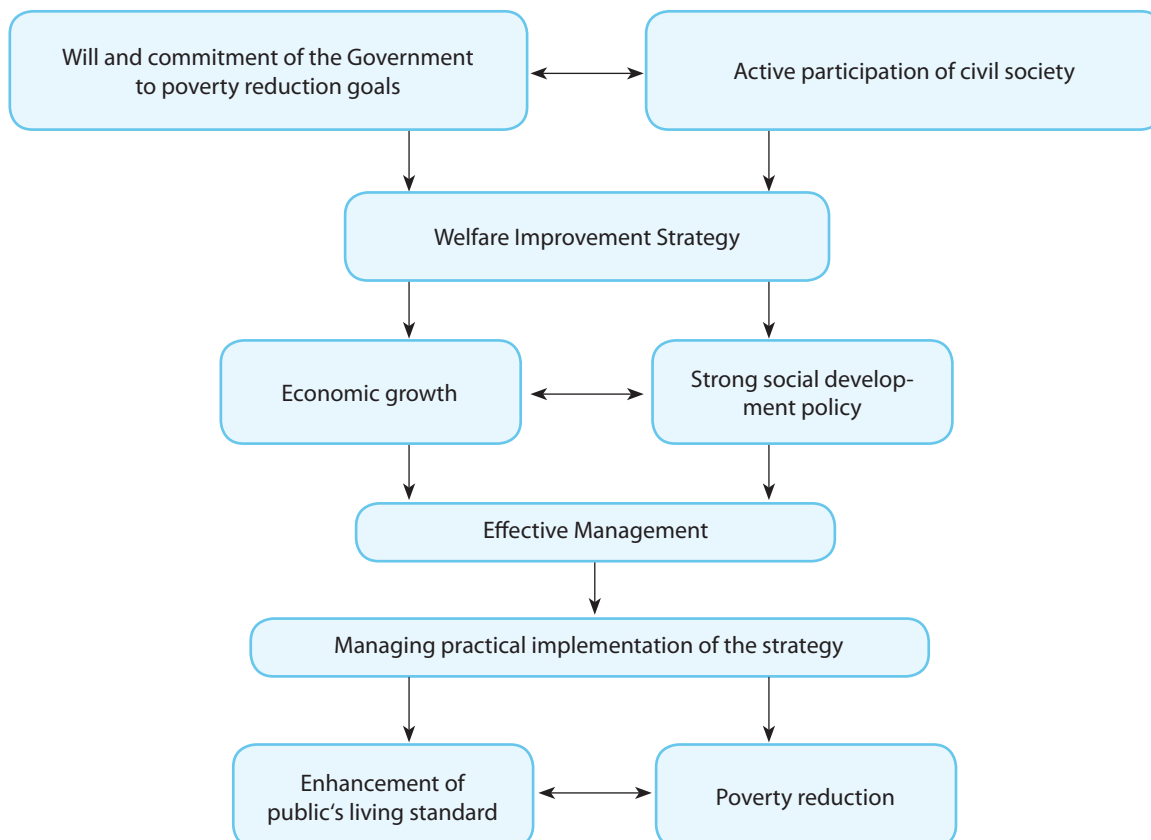


WIS – Welfare Improvement Strategy

RSELS – Regional Strategy for Enhancement of Living Standards

Overall scheme of living standards enhancement and poverty reduction system

WIS Process Flow Chart



One of the key components of the Strategy are regional strategies for enhancement of living standards (RSELS), which focus on:

1. Improve living standards in rural areas and reduce poverty through accelerated economic growth;
2. Facilitate equal access to the benefits of growth for all social groups, particularly the poor;
3. Promote sustainable human development;
4. Foster civil society and its participation in the decision-making process.

In April 2006 the First National Millennium Development Goals report for Uzbekistan was published. The report was prepared by the United Nations Country Team in close consultation with the Government. It aims to survey current trends in the country's development and to facilitate the monitoring of progress towards the MDGs in Uzbekistan. It is also meant to increase public awareness of the MDGs, stimulate research and encourage debate regarding what is to be done concerning the country's development challenges. Later in this report we will closely scrutinize the five most important health care related MDG's.

2.2 Impact of Nutrition on Population Health

Nutrition is one of the basic factors influencing human health. In spite of significant improvements of the economic situation in Uzbekistan reported over the past years, the problem of malnutrition is still urgent and micronutrient deficiency extremely high.

An analysis of household budgets reveals many interesting insights. Although improvements began in 2003-2005, it is still below the minimum consumption norms developed by the Ministry of Healthcare of Uzbekistan. Compared with medical recommendations, the consumption of meat products is only 32% that of the recommended level. Per capita egg consumption is about three-quarters below the norm. Cause for concern is the fact that consumption of bread and foods made of wheat flour is 1.6 times higher than the norm resulting in excessive carbohydrate consumption which leads to the development of various diseases.

Chemical and caloric analysis of the essential food consumed showed that while the nutrition value improved, caloric content declined from the caloric content in 2003, and deficiencies of some essential vitamins ranged from 3.8% -20%.

Food consumption patterns in rural and urban communities remain different. The rural population consumes mainly its own produce which explains the narrow range of food items they consume.

The most important yardstick for measuring the imbalance in food consumption is malnutrition, especially when it comes to children under 5 years old. At present 8.8% of Uzbekistan's children have low body weight for their age. In general, the rate of low body weight among young children (under 3 years) has been reduced from 19% in 1996 to 9% in 2002. Overall, the rate of stunted growth of children under 3 years old dropped by a third. The percentage of children with malnutrition and low body weight was halved. These statistics show that the interventions taken in the past 6 years have produced very impressive results.

Improvement of the nutrition status of children is closely linked with improving physical health and labour productivity, and improving cognitive development and progress at school. These factors, in turn, result in greater earning power in adulthood. Stunted growth in children, in particular in those under 2 years old, is irreversible. For each percentage point of stunted growth there are 1.4 percentage points of decreased labour productivity. The economic losses caused by anaemia are estimated to be 17% for jobs involving hard labour and 5% for those involving easy or moderate work. Cognitive losses related to iron deficiency amount to between 4% and 10%. Each two- or three-year delay in implementing a nutrition programme for pregnant women or children under 2 years old means there will be one more child whose physical and intellectual development will be retarded for his or her whole life.

Chronic malnutrition and stunted growth are graphic illustrations of the general status of child nutrition. Malnutrition may be the result of periodic or long-term malnutrition and repeated infections. Stunted growth is another indicator of low income as it decreases inversely with an increase in per capita Gross Domestic Product (GDP). Contrary to popular belief, malnutrition is not the result of food deficiency alone. Many children in affluent families, where there is no lack of food, may have low body weight or stunted growth. In such cases the cause may be improper feeding and care of infants, insufficient access to health care services or poor sanitary conditions. As the World Bank's recent report on nutrition shows, one of the causes of infant malnutrition in well-off families is that mothers in well-off families start supplementing their babies' diets before they are 6 months old. Yet breast feeding without supplements is the best way of providing micronutrients and the best protection against many infections and chronic diseases.

Table 2.1

Improvement in consumption of some food products

Per capita per year (kg) Consumption	On average			1 quintile		
	2003	2005	Changed (+;-)	2003	2005	Changed (+;-)
Bread and bread products flour	166.4	152.7	-13.7	169.6	149.1	-20.5
Potato	23.3	27.1	3.8	19.6	27.0	7.3
Vegetables and melons	83.1	86.0	2.9	66.8	72.7	5.9
Fruits and berries	12.0	15.7	3.6	9.0	10.6	1.6
Fish	0.6	0.8	0.1	0.4	0.5	0.1
Eggs, pcs	46.5	52.9	6.4	31.1	37.5	6.5
Vegetable oil	11.1	12.3	1.2	10.1	11.1	1.0

Table 2.2

Composition of consumed food products

Composition of food products (%)	On average		First quintile	
	2003	2005	2003	2005
Protein	12,4	12,3	12,3	12,2
Fat	9,6	10,9	8,6	9,9
Carbohydrates	78,0	76,4	79,1	77,9
Energy (Kcal)	2173	2141	2078	2025

Deficiencies of essential vitamins and minerals are still widespread in Uzbekistan, aggravating the problems of general malnutrition (low body weight and stunted growth).

The magnitude of the malnutrition problem is considerable, and given its consequences for economic growth, it requires urgent and large-scale interventions. Special attention should be paid to micronutrients, in particular to iron, iodine, and vitamin A deficiencies as their impact is severe, life-threatening and degrade the quality of life.

Iron supplementation is the most common treatment for anaemia. It is also one of public health care measures for preventing and controlling iron deficiency among populations at high risk for anaemia, like in Uzbekistan. An iron and folic acid supplementation programme launched in three provinces of Uzbekistan was later expanded to six provinces with support from UNICEF and JICA. Uzbekistan follows the Central Asian Agreement weekly supplementation programme developed by the Kazakhstan Academy of Nutrition even though daily instead of weekly supplementation is recommended as a health care measure.

Flour enrichment was begun at 14 Uzdukmakhsulot (a joint venture) flour mills. Finest grade flour is

enriched with iron and other micronutrients using a premix developed by the Kazakhstan Academy of Nutrition. An enriched flour logo is on their flour bags.

Healthy Child Weeks supported by UNICEF provide **vitamin A supplementation** for children aged 6 to 59 months. CIDA supports the Micronutrients Initiative providing Vitamin A capsule supplementation. 95% of children aged 6 through 59 months received two supplements of vitamin A in 2005. The initiative started in 2000 when 78% of children were covered, and in 2002 85% of children received vitamin A.

Monitoring and prevention of iodine deficiency. The ADB awarded Uzbekistan poverty reduction grants to render technical assistance for universal iodination of salt. The first payment was used to purchase iodination equipment for most of Uzbekistan's salt producers. The ADB may provide further financial support but is waiting until the law on salt treatment is adopted before granting additional funds. In 1998 only 8 % of salt sold retail was iodinated, and of that only 6.5 % contained the proper iodine concentration. Local administrations (khokimiyats) of the Republic of Karakalpakstan and Samarkand, Surkhandarya and Feragana Provinces issued orders prohibiting the sale of uniodized salt. The Institute of Health is to promote

iodized salt consumption, but its efforts in doing so are inadequate. For example, there is no common system to check that only iodized salt is used in school kitchens for pre-school children and school children. But the priority should be to produce properly iodinated salt rather than disseminating information about iodized salt before it is.

Every country, except Uzbekistan, in Central Asia plus Kazakhstan have adopted laws on universal salt iodination. All have increased salt production, and most have developed standard iodination methods, standards, tax and tariff exemptions for potassium iodide and equipment for salt iodination, and quality control systems. Laws on universal salt iodination are still a thing of the future in Uzbekistan where salt manufacturers face major problems due to a lack of a reliable supply of reasonably priced potassium iodide and problems with improving the quality of iodized salt.

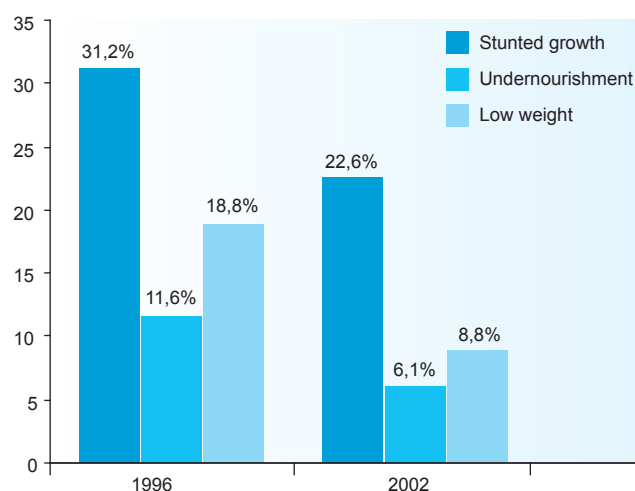
The Government of Uzbekistan is taking measures to address the problems of malnutrition. A number of public health and preventive measures programmes have been adopted to be taken in 2004-2008, such as iron and folic acid supplementation, enrichment of wheat flour with iron and folic acid, etc.

To overcome malnutrition in the immediate medium-term the following actions need to be taken:

- to prevent iron-deficiency anaemia, continue supplementing with iron and folic acid, enriching wheat flour with iron and folic acid; to prevent vitamin A deficiency, continue supplementing with vitamin A; to prevent iodine deficiency, continue iodinating salt;
- to overcome malnutrition, particularly among children under 5 years old, take measures to improve the quality of nutrition and prevent deficiencies of the major micronutrients;
- to continue promoting and expanding the practice of exclusive breast feeding;
- to develop broadest possible advocacy for good nutrition by involving not only health care providers but also educationists, local neighbourhoods (makhallya) and the family;

To resolve the complex problems malnutrition entails the country's resources will have to be mobilized and additional cooperation with international organisations cooperation and active participation of donor organisations will have to be developed

Figure 2.1
Dynamics of undernourishment of children under 3 years old in Uzbekistan, 1996-2002



Sources: UDHS 1996 & UHES 2002

Box 2.1

Report on micronutrient deficiencies in Uzbekistan

- 60% of children from 6 to 24 months of age in Uzbekistan are at risk for impaired intellectual and physical development. **Cause: iron deficiency.**
- According to estimates, in Uzbekistan, 400,000 mentally disadvantaged children are born annually due to iodine deficiency during pregnancy. As the prevalence of thyroid gland diseases account for 25-40% in Uzbekistan, moderate iodine deficiency disorders are so common that they lower the national average IQ by 10-15 points. **Cause: iodine deficiency.**
- The immunity of half (53%) of Uzbekistan's children is below normal, making them more vulnerable to diseases and poor development. **Cause: vitamin A deficiency.**
- Many young Uzbek women die each year during pregnancy and labour. **Cause: severe iron deficiency anaemia.**
- About 5,000 Uzbek infants per year are at higher risk of death before or immediately after birth. **Cause: severe anaemia in mothers.**
- Lower labour productivity. According to estimates, lower labour productivity in Uzbekistan lowers the GDP by 1.2%. **Cause: iodine and iron deficiencies.**

Source: UNICEF/Micronutrient Initiative, 2004

2.3 Reproductive health

The global situation. Reproductive health problems are major causes of disease and death among women worldwide. Reproductive health problems generally cover both men's and women's reproductive health. Reproductive health care is of great importance and a key task in attaining the goals set forth in the Millennium Development Goals.

Problems and issues related to reproductive health involve many aspects of socio-economic life, and to solve all of them is beyond the health care sector's power. However, many of them and their sequelae can be prevented at the primary health care level.

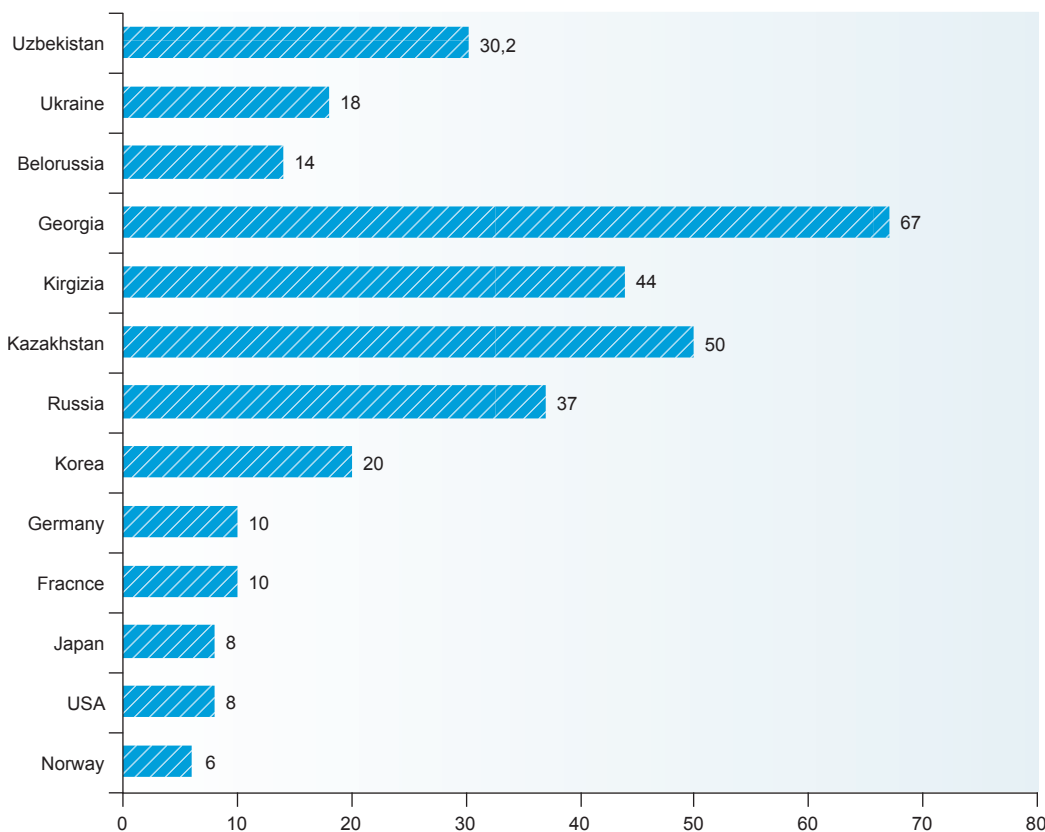
Child mortality is closely linked to maternal mortality. An estimated 530,000 women die each year in pregnancy or childbirth even though the world's governments launched the Safe Motherhood Initiative more than 15 years ago. These deaths are but the tip of the iceberg. At least 8 million women a year suffer severe complications in pregnancy or childbirth, with grave risks to their health. As with child mortality, the vast majority of cases of maternal mortality occur in developing countries, with South Asia (where the maternal mortality ratio is 540 deaths per 100,000 live births) and Sub-Saharan Africa (where the ratio is 920 per 100,000 live births) accounting for 75% of the total. The risk of dying from pregnancy-related causes

ranges between 1 in 18 in Nigeria and 1 in 8,700 in Canada. And as with child mortality, most maternal deaths are avoidable: around three-quarters could be prevented through low-cost interventions.

Be that as it may, overall levels of maternal mortality appear to have changed little over the past decade, especially in the majority of countries that account for the bulk of maternal deaths. Underreporting and misreporting of maternal death make cross-country comparisons and precise trend analysis difficult. However, proxy indicators—such as fertility rates and attendance by skilled health workers—indicate that the annual decline in mortality is slowing. Child health and maternal health are barometers of other areas of human development: the state of public health, the state of nutrition and the empowerment of women, among others.

The situation in Uzbekistan. 2,386 prenatal clinics provide health care services for Uzbekistan's women; 30,000 beds are available for in-patient care of women during pregnancy and for pre- and post-natal care, as well as for treatment of reproductive system diseases. There are 32 beds per 10,000 women of reproductive age during pregnancy and childbirth and 4.8 beds per 10,000 women for gynecological treatment. In addition, there are two special research institutes and three perinatal centers to care for women and infants. A center for artificial insemination is being estab-

Figure 2.2
Maternal mortality rate in some countries



lished and endoscopic surgery is being developed.

The introduction of comprehensive programs for improving women's reproductive health and children's health, the availability of special prevention centers and care centers for children and mothers at hospitals and out-patient clinics, better access to various modern contraceptives as well as the encouragement of longer spacing between births have all contributed to strengthening maternal and child health.

Since 1991 the rates of maternal mortality in Uzbekistan have been more than halved from 65.3 to 30.2 per 100,000 live births as a result of efforts focused on improving the health of women of reproductive age combined with preventing unwanted pregnancy, increasing spacing between births, and reducing the number of abortions.

What is striking is that there are difficult to explain differences in maternal mortality rates among provinces. The worst rates of maternal mortality in the country are found in Navoi, Khorezm, and Tashkent Provinces and in Tashkent-City.

Positive trends in maternal mortality are due to a reduction of the number of abortions, greater spacing between births, and changes in the age structure of women giving birth. Abortion is no longer a widespread birth control method in Uzbekistan. Medical abortions performed at health care institutions in the first 12 weeks of pregnancy are legal. Medical termination of pregnancy may be performed later, as well, if medical and social indications warrant.

The number of abortions per 100 births nationwide was reduced from 11.2 in 1991 to 9.1 in 2005. According to the findings of social monitoring conducted by UNICEF in 2003, the number of abortions is ten times less in Uzbekistan than in Estonia, 15 times less than in Russia, and 6 times less than in Kazakhstan. Only rarely in recent years have abortions been found to be the cause of maternal mortality.

Thanks to strong Government support for establishment of the healthy family, both urban and rural women are well informed about means of contraception. According to a public health survey (2002), 90.9% of all women of reproductive age are familiar with at least one modern method of contraception. The most well-known methods are IUD (98%), oral pills (85%), injections (78%), and condoms (68%). Only 13% of the women in this age group were regu-

Box 2.2

Maternal mortality rate in some countries

A Regional Program "Emergency Measures to Be Taken to Improve the Health of Women of Reproductive Age" was adopted in Uzbekistan in 1993 to provide for annual check-ups of women to identify those with risk factors and improve their health, as well as to ensure broad access to modern contraceptive methods.

The National Center for Reproductive Health was set up in 1999 and branches were opened in all provinces with the main objective of training reproductive health specialists and introducing international reproductive health services standards.

In 2000 the President of the Republic of Uzbekistan launched the establishment of branches of the Obstetrics and Gynecology Research Institute (OGRI) in Namangan, Karshi, Dzhizzak, and Nukus. The National Prenatal Center with 3.2 USD million worth of modern medical equipment was opened in 2002. The main goals of setting up regional OGRI branches were to conduct comprehensive research, provide treatment, and educational activities designed to reduce maternal and perinatal morbidity and mortality in those regions as well as to protect the reproductive health of women, improve the health of young and adolescent girls, and raise public awareness of health care. To strengthen the health of women of reproductive age, prevent unwanted pregnancy and increase birth spacing, the Government provides women all forms of modern contraception free-of-charge.

Figure 2.3
Number of abortions per 1,000 women of reproductive age

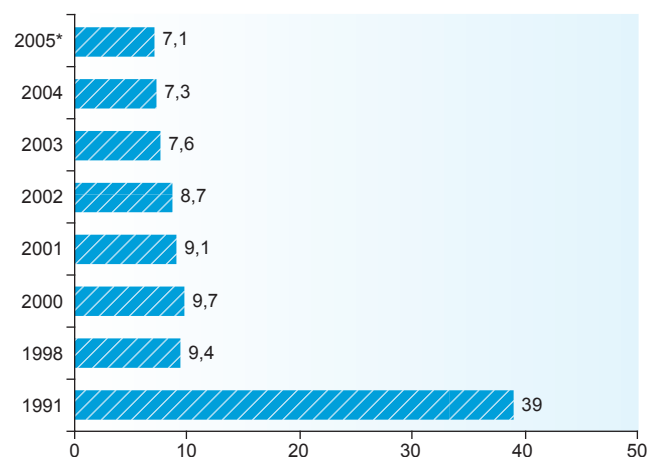
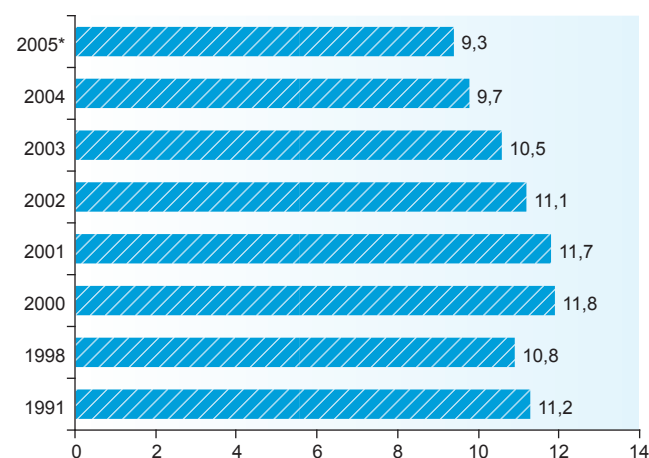


Figure 2.4
Number of abortions per 100 births



Source: the National Committee on Statistics

larly using some form of contraception in 1991, while in early 2005 the number had risen to more than 63%.

The IUD is the most frequently used modern contraceptive method, with over half of married women (52%) using that method. Oral contraceptive pills and injections are the next most popular, with voluntary surgical contraception (sterilization) used less frequently. The proportion of women using contraception is similar in rural (69%) and urban areas (66%) and among all educational groups. Particularly notable is that contraception is used most frequently by women in the 20-30 year-old age bracket when the fertility rate is at its peak and that contraceptive use in that age bracket has increased by 25%.

Thanks to medical, institutional and public awareness activities, the incidence of early marriages, births by young and middle-aged mothers declined sharply, while birth spacing increased.

For instance, the birth rate for mothers under 20 years old was halved between 1991 and 2004 from 7% to 3.7%, respectively. According to the findings of UNICEF social monitoring (2003), a mere 4.7% of mothers in Uzbekistan in 2003 were under 20 years of age which compares very favorably with Central and Eastern European and CIS countries where mothers in that age group in Poland, Kyrgyzstan, Slovakia, and Moldova, e.g., were 7.0%, 8.8%, 9.1%, and 16.3%, respectively. As data from an Uzbekistan public health

Figure 2.5
Birth spacing

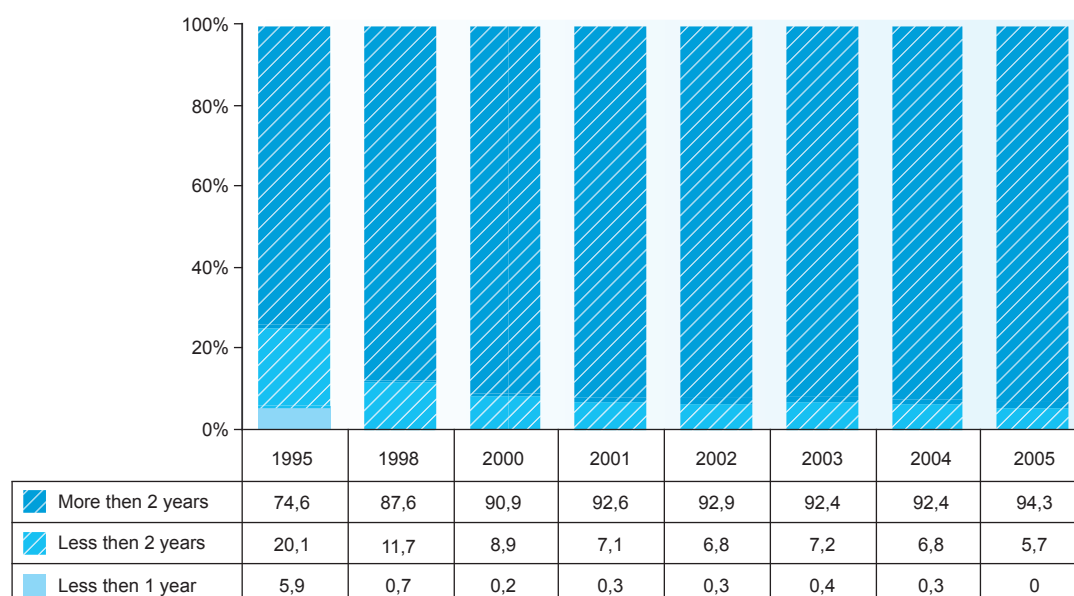
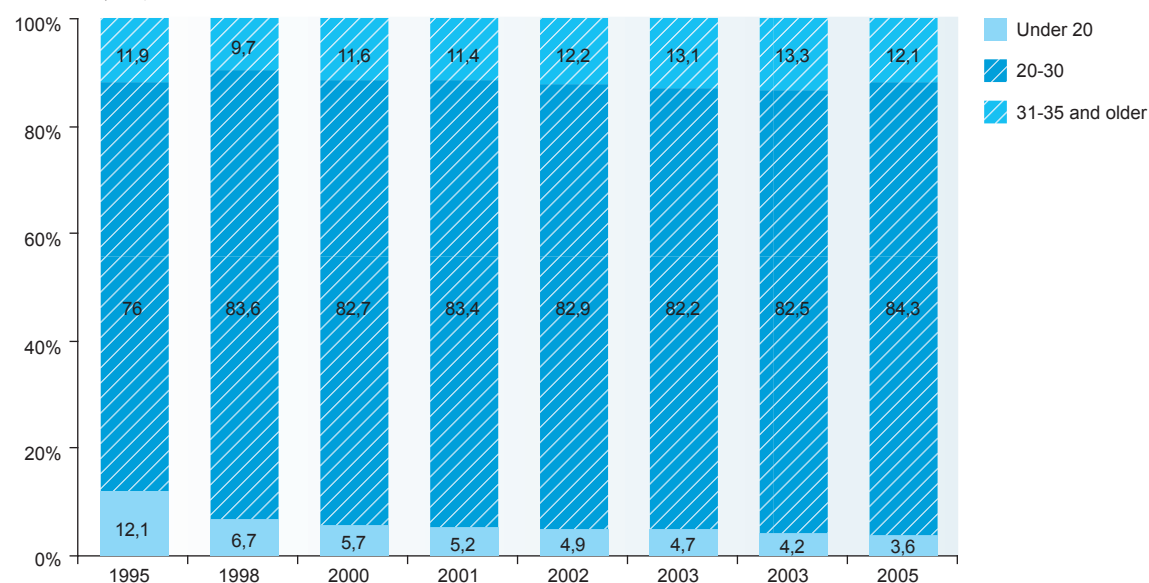


Figure 2.6
Births by age of mother



Source: the Health Ministry of Uzbekistan

survey (2002) show, the age at which women gave birth to their first child has increased in recent years: in 1996 the percentage of women between the ages of 20 and 24 having their first child declined from 60% in 1994 to 54% in 2002, according to the DHS.

The number of children born to women aged 20-30 years has increased from 69.3% in 1991 to 84.3% in 2005. It is notable that the share of births of the fourth child (10.1%) and the proportion of fifth childbirths (4.4%) also declined sharply while primiparae (34%), secundiparae (29.6%), and tertiparae (22%) predominated. The practice of birth spacing has increased. The number of children born to a mother less than a year after the birth of her last infant decreased from 5.9% in 1991 to 0.3% in 2004.

Despite a significant reduction in the maternal mortality rate, maternal mortality remains very high and is 4 to 5 times higher than it is in developed countries of the world.

Gynecological diseases, particularly inflammations, menstrual disorders, and infertility, are increasing and are an important indicator of women's reproductive health. The incidence of female reproductive system cancers remains high. In 2003 the incidence of breast cancer was highest with 12.6 cases per 100,000 women, followed by cervical and uterine cancer at 11.4 cases per 100,000 women, and ovarian cancer at 3.5 cases per 100,000 women.

Despite efforts to stabilize the maternal mortality rate, the rate has still not been stabilized: periods of declining rates alternate with periods of rising rates, sometimes inadmissibly high in some regions.

The high incidence of extragenital diseases among women of reproductive age with predisposing factors for complications during pregnancy and labor is why the rate remains unstabilized.

In 1992 somatic diseases were diagnosed in 38.4% of women of reproductive age and in 72.1% of women of reproductive age in 2004. This increase can be explained also by improved diagnosis of diseases at regular check-ups.

The highest rates of extragenital diseases are found in the Republic of Karakalpakstan (94%), Samarkand (82.3%), Navoi (75.7%), and Bukhara (76.3%) Provinces. The most frequent diseases are anemia (62.4%), renal disease (6.4%), endocrine diseases (5.1%) and cardiovascular disease (4.9%).

Additional measures need to be taken to resolve this problem. The measures should be focused on: disease prevention and improving the health of women of reproductive age; continued efforts to raise public awareness of the importance of increasing the use of contraception and birth spacing; and preparing women for pregnancy and delivery. It is essential that conception occur when a woman is in good health, receiving proper nutrition, and living and working in an environment conducive to a normal pregnancy.

Table 2.3

Dynamics of maternal mortality rates by provinces
(number of deaths per 100,000 live births, all causes)

Areas/ provinces	1991	1998	2000	2001	2002	2003	2004	2005
The Republic of Uzbekistan	65,3	28,6	33,1	34,1	32,0	32,2	31,4	30,8
The Republic of Karakalpakstan	108,7	60,1	38,8	41,9	26,6	25,0	22,9	15,3
Andizhan	44,1	17,7	20,2	20,5	17,3	23,2	25,7	21,3
Bukhara	35,6	33,4	49,0	54,4	37,3	42,2	23,4	29,7
Dzhizzak	99,9	30,2	29,4	42,5	29,7	35,2	24,5	25
Kashkadarya	69,9	30,1	39,9	40,6	37,1	31,5	24,4	24,4
Navoi		76,3	91,6	91,5	51,5	71,9	55,8	49,7
Namangan	45,4	27,0	27,0	29,3	18,4	31,8	21,0	30,6
Samarkand	43,4	19,4	26,4	17,9	21,9	18,0	20,9	17,4
Surhandarya	91,5	32,2	24,6	19,3	20,4	24,1	19,5	23,8
Syrdarya	83,6	26,4	21,0	35,7	26,4	14,5	21,5	34,7
Tashkent	43,2	20,9	27,5	44,2	59,8	52,7	43,6	43,3
Fergana	62,8	19,6	22,5	25,3	25,8	28,4	31,6	31,4
Khorezm	46,0	16,1	24,9	36,2	32,3	27,1	54,5	40,8
Tashkent-city	141,1	38,0	63,9	36,4	59,9	51,4	52,3	44,9

Source: the Health Ministry of Uzbekistan

2.4 Child Health Care

The global situation. Every year, even though this is the 21st century, over 10 million children die and half a half million mothers die. Most of those ten and a half million deaths are preventable.

Mothers, newborns and children are the pledge of a society's well-being and its potential for future development. If their health care needs are not met, it is to the detriment of the entire society.

The health of mothers and children has always been a priority. However, in the past decade the MDGs were focused on globally, and progress towards meeting MDGs is tracked everywhere.

For centuries maternal and infant care were always regarded as a kind of domestic job, i.e. the destiny of mothers and untrained midwives. In the 20th century this domestic care was regarded as a main target of public health services. In the 21st century and in the context of the MDGs, maternal and infant care have been thrust into the very centre of the fight against poverty and inequality as an aspect of human rights. This shift in emphasis has far-reaching implications in terms of world response to disparities between progress in one country and another.

Until recently, genuine efforts to resolve specific health problems of newborns were a rarity. The lack of coordination between maternal health care programmes and infant health care programmes left newborn in the breach. Every year about 3.3 million children are stillborn, and another 4 million die within 29 days of birth.

Most infant deaths are avoidable. While faster economic growth could reduce mortality rates, mortality rates are higher than they should be because of the indefensible underuse of effective, low-cost, low-technology interventions—and because of a failure to address the structural causes of poverty and inequality.

Cross-country research published in *The Lancet* in 2003 identified the 23 interventions with the strongest impact on child mortality. These interventions—15 of them preventive and 8 curative—ranged from oral rehydration therapy to drugs to insecticide treated bednets for preventing malaria to prenatal and obstetric care. Most of the interventions can be provided on a low-cost basis by trained health workers and local communities. Using 2000 data and assuming 100% coverage of these interventions, the authors of the study concluded that around two of every three child deaths—6 million in total—could have been prevented.

It is said that achieving rapid decline is unaffordable. Not true. Some countries do face major financial constraints—hence the need for increased aid. But child mortality is an area in which small investments yield high returns. Recent cross-country research on neonatal mortality identifies a set of interventions that, with 90% coverage in 75 high-mortality countries, could reduce death rates by 59%, saving 2.3 million lives. The USD 4 billion price tag represents two days worth of military spending by developed countries.

The situation in Uzbekistan. Mother and Child Screening (1998), Healthy Generation (2000), Mother and Child (2001), Additional Measures to Improve Women's and the Younger Generation's Health, Measures to Achieve the Most Important Goals of Improving Family Life-Style, Strengthening Women's Health, Birth and Child Rearing, and Healthy Generation are among the special programmes adopted in Uzbekistan in recent years designed to promote achievement of important health objectives. A logical follow-up to efforts to solve maternal and child health problems and building a healthy generation was the National Year of Health Programme (2005).

Age of children in the population structure. As stated above, the urgency of child health problems in Uzbekistan is associated with the high proportion of children in the population structure. Children between 0 and 14 years old account for 34.7% (8,994,700) of the nation's total population. Children under 5 years old were prevalent in the age structure (35.9%) till the mid-1990s; then in 2000-2001 children aged 5-9 years did. Since 2002, children 10 - 14 years old have been prevalent in the age structure of the population of the country (36.5%). These changes occurred because of the drop in child mortality of children under 5 years of age that occurred in parallel with the drop in birth rates.

The child health care system. Currently 3,573 general practitioners, 9,793 pediatricians, 1,444 neonatologists, 613 child surgeons, 497 child infectionists, and other specialists provide health services to children nationwide. In 2004 98.9% of children aged 0-14 years old had a complete medical examination covered, compared with 96.9% in 1999. There are 10.89 pediatricians and 26.84 neonatologists per 10,000 children nationwide (the data are based on the total number of births). The highest number of pediatricians and neonatologists are reported in Tashkent-City (27.75 and 51.84 respectively). The lowest number of pediatricians is in Syrdarya (5.73) Province, the lowest number of neonatologists is in Dzhizzak (14.35).

In 2004 864,830 children in Uzbekistan underwent medical treatment; there were 29,786 hospital beds, the average bed occupancy was 308.6 days, the average

length of patient hospital stay was 10.3 days.

Infant mortality is the most important qualitative indicator of a country's health care system's performance, defining what the funding priorities will be for the social sector.

A significant reduction in infant mortality represents a major human development achievement for a nation. According to official data, infant mortality among children under 12 months of age decreased from 35.5 per 1,000 in 1991 to 15.4 in 2004.

Figure 2.7
Dynamics of infant mortality

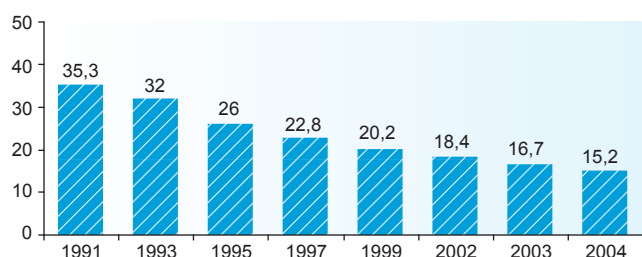
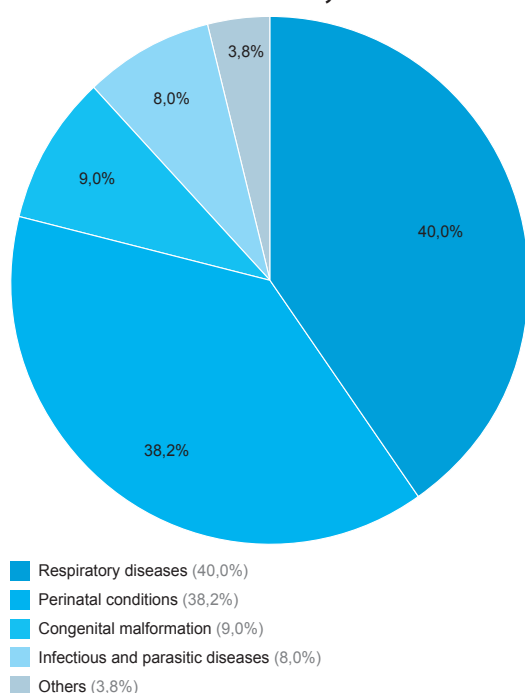


Figure 2.8
Structure of infant mortality



Implementation of Government programmes to strengthen women's and infant health, for safe motherhood, breastfeeding promotion, curbing acute respiratory diseases and diarrhea in young children, prevention of micronutrient deficiencies (iron, iodine, and vitamin A) among women of reproductive age and children contributed to this significant achievement. Advocacy of a healthy lifestyle played an important part, too.

However, according to an assessment by international experts, inaccurate registration of infant mortality results in underestimation of the rate in some provinces of the country. Accuracy of registration of all births and deaths is crucial not only for obtaining reliable natural demographic statistics but also for ensuring child rights. Errors in registration reduce the likelihood that children will gain access to the government's support and services system, and deprive children of the right to have a family name and nationality. The success of policies designed to increase the chances for child survival is also dependent on the availability of reliable information about the numbers of children born and child mortality.

Prenatal and neonatal mortality currently significantly influence the rates of and trends in child mortality. Each year over 3.3 million babies are stillborn worldwide, and more than 4 million infants die before they are 4 weeks old. According to global data from WHO's Regional Office for Europe, every minute 5 infants die in the first week of life, 8 infants die within the first few months of life, and 8 babies are stillborn.

As Uzbekistan's Ministry of Health data show, respiratory diseases are the most frequent cause (40.0%) of infant mortality. It is noteworthy that the share of pathological perinatal conditions that are now the second largest ones in the mortality structure is increasing (38.2%). Congenital abnormalities accounted for 9.0% in 2004.

Independent experts consider certain phenomena in the Republic of Uzbekistan paradoxical in that the phenomena are not typical of a country with a health care system and child welfare system as well developed as Uzbekistan's.

First, there is a high proportion (65%) of infant mortality among full-term newborns with body weight above 2.5 kg. In other countries high infant mortality is most often associated with births of pre-term newborns with low birth weight. Asphyxia and birth injuries are predominant in the structure of neonatal mortality.

Second, the rate of neonatal mortality is completely inconsistent with the high rate of deliveries in obstetric facilities and with the existing level of skilled medical personnel in attendance for labor and deliveries at those facilities. However, the rate of neonatal mortality in Uzbekistan is similar to that in countries where the percentage of such health providers is low.

Newborn deaths account for 38.7% of infant mortality in Uzbekistan's infant mortality structure, with over two-thirds of newborn deaths occurring in the first 7 days of life.

These paradoxes reflect grave flaws in the way obstet-

ric services are managed, including their lack of modern equipment and medicines, but the most important flaw is the inadequate professional skills of physicians and midwives in delivery management.

Substantial shortcomings exist in health care services provided during the first days and weeks of a baby's life. These shortcomings are mainly associated with unclear delineation of staff member duties. Even when formulated clearly, they are often managed improperly or ineptly. The high proportion of early neonatal newborn mortality reflects improper or inept care provided by poorly trained personnel. Not infrequently basic procedures such as weighing infants, maintaining proper ambient temperature, washing hands by personnel, etc. are done improperly or not done at all.

Expert data indicate that achieving the MDG's infant mortality reduction target is a fully feasible and manageable process. It depends, first of all, on the quality of health services provided during delivery and the first days of a newborn's life, improvement of the skills of health providers and availability of essential equipment in maternity hospitals.

First of all, the following drawbacks need to be addressed:

- distortion of statistical data by health providers, including the use of Soviet era criteria for live birth and stillbirth;
- incomplete parental registration of births and deaths of their children;
- poor skills of pediatricians, neonatologists, general practitioners, and nurses many of whom are not adequately trained for their duties, particularly at the primary health care level.
- To resolve these problems the following measures were taken in 2004-2005:
- introduction in Ferghana Province and Tashkent-city of live birth and stillbirth criteria recommended by WHO;
- over 250 obstetricians-gynecologists, neonatologists, neonatal surgeons, pediatricians and other appropriate specialists from all provinces were retrained thanks to cooperation with the Ministries of Health of Russia, Ukraine, and Turkey;
- trainers (leading university faculty members and practitioners) for primary resuscitation of newborns were trained thanks to the support of WHO/UNICEF international experts;
- the National Perinatal Center and two municipal perinatal centers in Tashkent-City are operating;
- 24 obstetric institutions were certified by UNICEF as "Baby Friendly Hospitals;"

- The Women and Younger Generation Health Improvement Project (2005-2009) funded by the Asian Development Bank in the amount of USD 40 million was launched. Under the Project, newborn resuscitation units in central district hospitals and provincial maternity hospitals in five pilot provinces (the Republic of Karakalpakstan, Kashkadarya, Tashkent, Fergana, and Khorezm) are to be equipped with special equipment. Health care personnel of maternity hospitals (neonatologists, obstetricians-gynecologists, and nurses) are to be trained in providing modern health care services to pregnant women and newborns.

Given the extremely positive effect of The Healthy Child promotion campaign, it is essential to continue raising public awareness of the most favorable age for women to give birth, birth spacing, proper nutrition and surroundings for pregnant women, as well as to improve the health of women of reproductive age who are preparing for pregnancy and delivery.

Box 2.3

Mother and Child Screening

Since 1998 a set of measures have been undertaken to implement the State Mother and Child Screening Programme nationwide in an attempt to prevent the birth of children with hereditary diseases causing mental deficiency as well as to examine pregnant women to identify fetal development abnormalities. Eleven screening centers were established and equipped in Tashkent-City, Samarkand, Bukhara, Andizhan, Namangan, Fergana, Karshi, Termez, Urgench, Navoi and Nukus. Among these screening centers' major activities are: (1) screening pregnant women (prenatal); (2) screening newborns (neonatal); (3) medical and genetic counseling for families, (4) dispensary examination (check-ups) and treatment of children; and (5) creation of a draft state register of genetic and congenital pathologies. In order to conduct prenatal and neonatal screening, the centers were equipped with modern biochemical analyzers enabling them to conduct screening research, e.g. biochemical screening of pregnant women to reveal congenital abnormalities of the fetus as well as congenital hypothyroidism and phenylketonuria. National infrastructure and a public screening system were to conduct prenatal and neonatal screening, monitoring and treatment of new patients, and counsel families about medical and genetic problems.

To promote family health and reduce the number of potential cases of inherited and other diseases, a prenuptial medical check-up system was introduced in 2004 to detect diseases such as mental disorders, tuberculosis, venereal diseases, drug addiction, and HIV infection in people applying to get married.

Box 2.4

Alternative explanations of infant mortality rates

The 2002 Uzbekistan Demographic Health Survey (UDHS) documented an infant mortality rate of 61.7 per 1,000 live births whereas Government data put the rate at 16.7 per 1,000. In many other countries (e.g., Kyrgyzstan, Kazakhstan, Turkmenistan, and Azerbaijan) the infant mortality rate estimated by comparable surveys also significantly exceeds the official rate. The reason for the large discrepancies is that official estimates apply Soviet criteria for live births whereas the UDHS and similar surveys use current WHO recommendations which differ substantially from Soviet criteria. However, the large discrepancies cannot be explained by differing criteria for live births alone. The UDHS infant mortality rate should also be taken with a grain of salt. The UDHS rate was calculated using a random sample and assessed only that sample of the population. Another sampling method might have yielded different results. Registration problems related to concealing information on infant mortality by health workers, underreporting of and delays in registration (by parents) of deaths at vital statistics offices are other factors contributing to discrepancies between the two infant mortality rates.

Box 2.5

Expanding international cooperation to improve women's reproductive health, child birth and child rearing

Donors, international organizations, ministries and agencies, and non-governmental organizations support the Government's health policy and contribute to the improvement of maternal and child health on all levels of the health care system. For instance, the mother and child health programs known as "Increasing the Effectiveness of Perinatal Care", "Introduction of WHO Live Birth Criteria", "Newborn Resuscitation", "Encouragement and Promotion of Breastfeeding", "Reproductive Health Promotion", "Anemia Prevention," and "Iodine Deficiency Disorders Prevention" are being successfully implemented in cooperation with WHO, UNICEF, UNFPA, USAID, and KfW.

In 2003 the UNICEF Regional Office recognized Uzbekistan as the regional model for implementation of the WHO/UNICEF project "Promoting Effective Perinatal Care." In 2005 "The National Flour Enrichment Program" was launched to prevent iron deficiency anemia among children and among women of reproductive age. The program, funded by the Global Alliance for Improved Nutrition in the amount of USD 2.8 million, produced 90,000 tons of flour enriched with iron and folic acid in 2005.

Child mortality

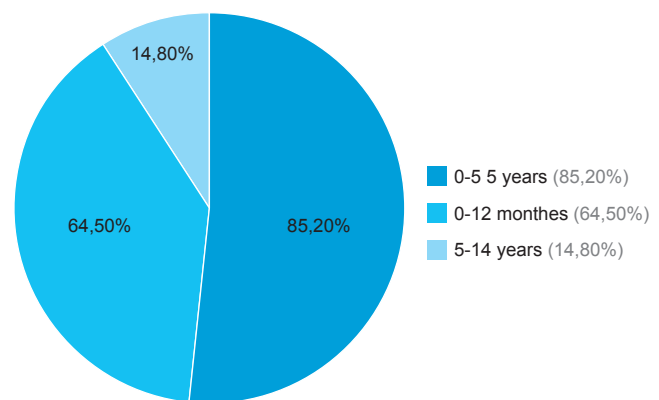
The birth of a healthy child is a prerequisite for its good health later on in life. Hence postnatal mother and newborn management is of critical importance. Although the greatest threats emerge in the very first days of life, they do not disappear until after infancy and early childhood. The first 5 years of life are still the most vulnerable period of childhood. Children of this age are prone to various infections and non-infectious diseases. So-called "background" conditions (e.g. anemia, hypotrophy or low weight, rickets, etc.) often lead to high morbidity and mortality in this group of children.

Many health problems in this period can be resolved by exclusive breastfeeding up until the infant has reached the age of 6 months, good nutrition with timely introduction of supplementary feeding, and early recognition by parents of disease symptoms, especially situations requiring urgent medical attention.

The Ministry of Health of Uzbekistan, in addition to implementing the above-mentioned Government program, is implementing other programs and projects, e.g. Safe Motherhood, Encouragement and Promotion of Breastfeeding, Safe Immunization, Integrated Management of Childhood Illnesses, Improvement of Reproductive Health, Establishing a Healthy

Figure 2.9

Age structure of child mortality (0-14 years)



Family, Prevention and Elimination of Micronutrient Deficiencies (iodine deficiency, iron deficiency diseases and iron deficiency anemia, Vitamin A deficiency) with financial support from WHO, UNICEF, the World Bank, ADB and the Global Alliance for Improved Nutrition.

Child mortality, in particular during the first five years of life, does not depend solely on the level of development of medical treatment and the quality of health care services. Non-medical factors such as good, balanced nutrition providing a child's body with essential vitamins and energy, as well as environmental factors, also play important roles in reducing child mortality.

However, medical factors are of critical importance in reducing child mortality. Analysis shows that the child mortality rate in Uzbekistan dropped significantly from 48.2 per 1000 in 1991 to 20.6 per 1000 in 2004, which is to say it was 2.4 times lower in 2004 than in 1991. At the same time this rate is considered high for a country with such a highly developed health care system as Uzbekistan has.

Figure 2.10
Structure of mortality of children (0-5 years)

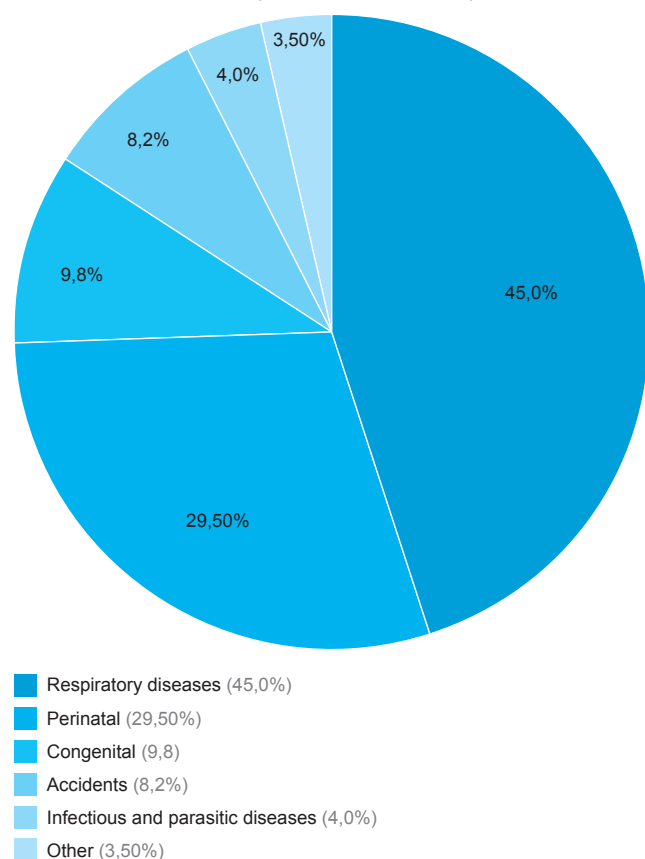
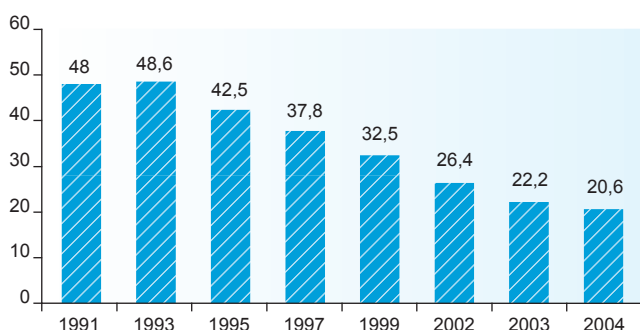


Figure 2.11
Dynamics of mortality among children aged 0-5 years in Uzbekistan in 1991-2004



The major factors for the first 5 years of life in the mortality structure are respiratory diseases (45%) and perinatal pathologies (29.5%).

Timely immunization against infectious diseases is an

important factor in improving child health and reducing child mortality. The relatively low (4%) child mortality due to infectious and parasitic diseases is associated with the fact that 97-98% of all children are vaccinated against all major infections (measles, diphtheria, hepatitis B, poliomyelitis, etc). International organizations (WHO, UNICEF) support immunization campaigns in Uzbekistan.

Thus, infant and child mortality rates depend primarily on the level of development of the health care system and of the quality of the services they deliver.

Medical factors causing child mortality. The medical factors causing high child morbidity and mortality are:

- problems associated with poor diagnosis, first aid, prevention, regular check-ups, recuperation in rural medical facilities, all of which are main aspects of a GP's work in treating children. Testing of GPs working at such facilities revealed their lack of knowledge and practical skills needed to provide proper health care services for children;
- lack of approved standards (protocols) for providing health services at primary health care facilities as well as at the hospital level, inadequate management of the quality of health services, and a lack of familiarity on the part of many health care administrators at various levels with science based principles of health care management.
- outdated equipment, sometimes used improperly, inadequate maintenance of diagnostic laboratories particularly on the primary health care level, lack of apparatus Ambubags, intratracheal tubes, laryngoscopes) and instruments for resuscitation and primary care of newborns. Furthermore, 78% of the medical equipment currently in use was acquired prior to 1990 and is now depreciated and obsolete.
- lack of knowledge on the part of family members of child care best practices, limited access or often no access at all to resources and information on child health, plus limited knowledge of patients and care givers of patients' health services rights.

All of these shortcomings need to be corrected as part of health care reforms. A set of measures is to be taken by the Government to address these shortcomings in order to achieve the MDGs. The Government of Uzbekistan, in cooperation with international organizations promoting the use of modern obstetric and pediatric technologies, is well positioned to make tangible progress towards reducing mortality among infants and children under 60 months of age in accordance with the MDGs and priorities identified in the program documents for "A World Fit for Children to Live in" and "No mother, no child left behind."

Box 2.6

Recommendations for reducing infant and child mortality

- Review statutory regulations specifying health services for children at all delivery stages, in particular at primary health care facilities.
- Make key policy decisions on adherence to maternal and child health criteria (including legislative support for WHO criteria for live birth and stillbirth nationwide).
- Improve the system for registering child births and deaths.
- Improve information (reporting) system to make rapid decision-making possible.
- Specify perinatal care services (refer high risk patients to the next higher level of health care).
- Improve quality of health care services for women during pregnancy and delivery and for newborns and children using modern technologies recommended by WHO and UNICEF.
- Design and implement evidence-based clinical guidelines (standards) and diagnostic and treatment protocols for all levels of health care services for newborns and children.
- Train medical staff according to regulating documentation (orders and clinical guidelines).
- Monitor child growth and development using resources of child out-patient institutions and rural health care facilities.
- Improve undergraduate and post graduate training for GPs, pediatricians, and nurses in providing services at all stages of child health care. Introduce available obstetrical and child health services programs for pre-service and in-service training of health care providers.
- Train managers of health care institutions to manage quality of health care services.
- Improve system of licensing, accreditation and certification of health care providers and health care institutions. Introduce mandatory certification of newborn and neonatal health care workers (neonatologists, nurses).
- Supply medical equipment to obstetrical and child health care institutions.
- Adopt law on food supplementation with micronutrients (iodine, iron, and vitamin A)
- Develop and implement a national monitoring and assessment system to monitor the effectiveness of services.

2.5 AIDS, TB, Viral Hepatitis

The HIV infection and AIDS have afflicted the world community with a catastrophe of virtually unprecedented magnitude threatening the lives of many millions of people – primarily adults, children, and adolescents. According to WHO data, there are more than 39.4 million HIV positive people worldwide; 4.9 million of them were infected in 2004, including 2.2 million children under the age of 15. The HIV infection has claimed 3,100,000 lives.

The problem of HIV/AIDS is therefore under very close scrutiny everywhere. The Declaration on the Commitment to the Cause of the Struggle Against HIV/AIDS adopted at the 26th Special Session of the UN General Assembly calls for stepping up the fight against HIV/AIDS and ensuring coordination of prevention and treatment efforts to protect the rights of all patients.

HIV/AIDS has become a serious problem in Uzbekistan as well. Between 1987 and 1999 76 people were registered as HIV-positive. However, since the year 2000 that number has been climbing steadily from 154 in 2000, to 549 in 2001, to 981 in 2002, to 1,836 in 2003, and to 2,016 in 2004, with 2,198 new HIV-positive cases being reported in Uzbekistan in 2005. Since the first case was diagnosed in 1987, the

total number of people registered as HIV-positive people has grown to 7,600.

In 2005 the highest share of HIV cases were identified in Tashkent-city (28%) and Tashkent province (14.0%). Among HIV-positive patients, 18.4% are women and 1.5% are children. Since HIV monitoring began, there have been 69 HIV-positive cases among pregnant women of whom 59 gave birth. Since 1987 574 HIV-positive patients have died, 70 of whom had AIDS.

Epidemiological surveillance and prevention programs on the spread of the HIV-infection are costly because current therapeutic methods require up to USD 20,000 per year AIDS patient. The large numbers of people with HIV/AIDS are creating major problems for Uzbekistan's health care system and economy.

At present the major HIV/AIDS related problems in Uzbekistan are:

1. growing number of vulnerable groups among the population: injecting drug users, patients with sexually transmitted infections and commercial sex workers;
2. increasing TB incidence among HIV-positive people;
3. lack of antiretroviral drugs, high cost of treating HIV/AIDS patients;

4. inadequate intersectoral cooperation in combating HIV/AIDS;
5. poor public awareness of HIV/AIDS and its consequences.

Routes of HIV transmission (2004)

Injecting drugs	59,3%
Heterosexual contacts	11,3%
Homosexual contacts	0,4%
Unknown routes of transmission	29%

The Ministry of Health is undertaking certain measures, in cooperation with other ministries, various agencies, NGOs and international organizations, to prevent the spread of HIV/AIDS. 230 "Confidential Points" are successfully operating in every province of the country offering IDUs pre-test and post-test counseling. Their success has increased the number of voluntary and anonymous tests. Thanks to these Confidential Points, the trust of IDUs has been won, making it possible to exchange syringes and needles, and to distribute condoms and disinfectants to IDUs thereby changing their behavior and reducing their risk of HIV infection during drug injection. For example, to illustrate the effectiveness of the syringe exchange program, in the town of Yangiyul in Tashkent

Province the program reduced the HIV infection rate by 28.1%, compared with the rate in 2000.

UNODC is supporting a number of international projects in Uzbekistan designed to upgrade information systems used in the war on drugs, to ensure government control over turnover of precursors and to improve the skills of physicians, psychiatrists, psychotherapists and psychologists specializing in treating addiction to narcotics and other psychotropic substances to prevent the spread of addiction to such substances

To address the spread of drug addiction effectively the following measures are being under taken in Uzbekistan:

- 8 international consultative and technical assistance programs with support from UNODC are being carried out;
- 10 programs are being implemented in cooperation with NGOs;
- The National Youth Friendly Attitude Plan was introduced for conducting peer-to-peer training sessions;
- Interactive computer training in law enforcement drug control operations has been given to member states of the Memorandum on Understanding on Regional Cooperation in Drug Control;

Box 2.7

Legislative underpinnings of HIV/AIDS prevention and treatment in Uzbekistan

In August 1999, Law of the Republic of Uzbekistan On the Prevention of Diseases Caused by the Human Immunodeficiency Virus (HIV) was adopted by the Government, thereby raising public awareness of HIV/AIDS prevention. It provides a means of protection, and ensures diagnosis and treatment of HIV/AIDS, and epidemiological control of its prevalence throughout the country. The law also regulates HIV/AIDS testing procedures, safety and anonymity of medical examinations, social assistance to HIV-positive people and AIDS patients, their education, training, and employment.

HIV-positive people and AIDS patients have the right to humane treatment, free health care and social security. Termination of an employment contract, denial of recruitment by or admission to educational institutions as well as limitations on other rights and legitimate interests because of one's HIV/AIDS status are prohibited.

In 2003 the Cabinet of Ministers of the Republic of Uzbekistan adopted a strategy for 2003-2006 for combating the spread of HIV/AIDS under which all concerned ministries and agencies developed plans for each sector. There is a Commission on Emergency Epidemiological Situations (CEES) in Uzbekistan. A coordinated system for the prevention of and fight against HIV/AIDS has been established. National protocols for antiretroviral therapy, substitution and syndrome therapies for drug addiction and STI have been developed. Since 2003 mobile epidemiological surveillance has been in operation indicating that HIV has reached the "epidemic" stage in Uzbekistan.

Preventive measures are being undertaken in accordance with public health norms (SanPiN) approved by the Ministry of Health October 6, 2005, which include voluntary, mandatory, and compulsory HIV testing of patients. The following categories of individuals are to be tested:

- blood donors and donors of other biological fluids;
- individuals who have had contact with an HIV-positive individual;
- hetero- and homosexual partners detected during epidemiological investigation;
- organ and tissue donors;
- patients with hepatitis B, hepatitis C, STIs at drug treatment facilities and tuberculosis institutions.
- prisoners.

Law enforcement bodies can compel an individual to be tested for HIV.

- five regional projects within stage two of the EC Program CADAP are in progress;
- Integrated operation “Black Poppy” is being carried out;
- physicians (narcologists, psychiatrists, psychotherapists) and psychologists are being trained in rehabilitation of patients addicted to psychotropic substances, and in methods of preventing the spread of drug addiction and in the use of substitution therapy;
- ministries and agencies involved in these projects are being provided with the necessary equipment, including laboratory apparatus, supplies, vehicles, office equipment, etc.;
- Inter-sector drug control agreements are being implemented.

Uzbekistan has received a five-year USD 24.5 million Global Fund Grant to Combat the Spread of HIV/AIDS. The grant program provides for:

- preventive measures focused on groups at risk;
- better access to health care services and support for vulnerable groups in the population as well as provision of antiretroviral therapy;
- creation of a supportive environment for vulnerable groups in the population and protection of the rights of people living with HIV/AIDS

Tuberculosis has now become a global problem so that not only developing but also developed countries are experiencing the epidemiological process. According to WHO data, one-third of the world's population is infected with tuberculosis, with 8 to 10 million people contracting the disease and 2.5 to 3 million people dying from it annually. According to various estimates, without effective control and treatment, by 2020 there will be roughly 1 billion people worldwide with tuberculosis, another 200 million will contract the disease and another 70 million will die from it. The toll from tuberculosis is far higher than that from any other infectious disease.

In response to the worldwide increase in the incidence of tuberculosis, WHO in 1993 sounded the alarm to the world community about the global tuberculosis threat and urged all countries to take urgent action to combat it. Unfavorable socioeconomic factors as well as migration, increased alcoholism, and the drug addiction and HIV/AIDS epidemics are all fueling the increase in tuberculosis morbidity and mortality. Anti-tuberculosis measures rendered ineffective by insufficient resources and by the government's inadequate commitment to combating TB are having a negative impact on HIV/AIDS morbidity and mortality.

Legislative underpinnings of the struggle against tuberculosis. To address the threat from the spread of

tuberculosis, The Law on Protection of the Population Against Tuberculosis has been in force in Uzbekistan since 2001. It sets forth systemic measures to prevent the spread of the disease, provides for free treatment of the disease, and makes vaccination of newborns and re-vaccination of children against the disease mandatory.

People hired for specific jobs undergo check-ups with bacteriological and fluorography or X-ray examinations. To protect the population against tuberculosis, veterinary services perform mandatory examinations of animals using the tuberculin test, and prohibit the unregulated sale of animals and animal products from live-stock farms where tuberculosis is suspected.

TB patients are entitled to all forms of treatment for tuberculosis, including care at special sanatoria, as well as to social, housing and employment assistance, training, education, etc.

Tuberculosis morbidity rate and prevalence. It is extremely alarming that over the past decade TB morbidity in Uzbekistan surged by 78.8%, the total number of TB in-patients shot up by 54.1%, and the number of deaths from TB soared by 57.7%.

Over the past 5 years TB morbidity increased 16.5% nationwide, and 18.1% and 33.8% among adolescents and children, respectively. There was a greater increase in the morbidity rate among males (20.3%) than among females (19.2%).

Since 2003 the TB morbidity rate has leveled off somewhat, whereas the mortality rate has been stable for the past 5 years.

In 2005 TB incidence in Uzbekistan was 76 per 100,000. Incidence among children under 14 in 2005 was 35. **Incidence among adolescents was 41.4 in. Incidence among adults was 106.8 in 2005.**

Features specific to the course that TB has followed in Uzbekistan include its high incidence among adolescents and young adults, particularly women of reproductive age. In addition to the above-mentioned negative factors, the high incidence of TB found in penitentiaries has also contributed to the growing morbidity of tuberculosis and its worsening structure in Uzbekistan.

Analysis shows that the number of cases of tuberculosis in children grew by a factor of 2.4 over the past decade. Children aged 10 to 14 years old account for over 50% of all new active TB cases, while children between the ages of 5 and 9 account for 40%.

In 2005 there were 19,876 active TB cases. The rate of primary TB remained unchanged from 2004 to 2005, remaining at 1.8% in 2005.

TB morbidity was highest in provinces with pressing

socio-economic and environmental problems, including the Aral Sea disaster area.

Because of the increase in the TB morbidity rate and ineffective monitoring of treatment a pool of TB patients has been created, 30% of whom have been ill for a long period of time and are discharging TB bacilli creating a very great, epidemiologically speaking, threat inasmuch as each patient discharging TB bacilli may infect up to 10-15 people. Every fifth patient with chronic TB becomes disabled by the disease.

Tuberculosis Related Mortality. The mortality rate is an important epidemiologic indicator for TB. In 2004 TB mortality was 10.1 per 100,000. High mortality was reported in the Republic of Karakalpakstan and Tashkent-city. Making the country's epidemiologic situation even bleaker, TB mortality increased by 11.1% among those under observation for up to 1 year. Analysis of autopsy reports showed that many (22.9%) patients who died from tuberculosis had not been registered by health care institutions.

TB diagnosis and treatment. Drug-resistant forms of tuberculosis unresponsive to generally accepted antibacterial medicines have been found increasingly more frequently in recent years. According to some researchers, over the past 30 years primary resistance of tuberculosis mycobacteria has become 3.8 times stronger, and drug resistance 10 times stronger.

Research conducted under WHO auspices in 35 countries in 1994-1997 identified primary resistance of tuberculosis mycobacteria in 9.3% of all cases examined (ranging between 2% and 41%). Secondary resistance to only one antibacterial drug was found in 36% of all examined cases, while poly-resistance was found in 13% of all cases examined. Particularly high poly-resistance was found in the countries of the former USSR and Asia.

Development of poly-resistant tuberculosis is caused by unscientific or incomplete treatment as well as by infection by patients with drug-resistant pulmonary tuberculosis who have been spreading the disease for a long period of time by discharging TB bacilli.

The growing upward trend in the number of drug-resistant cases of TB in the Republic of Uzbekistan is cause for grave concern. Research conducted in the Republic of Karakalpakstan by the organization *Medicins Sans Frontiers* showed that despite concerted efforts to implement DOTS strategy and methods, a significant number of TB patients escaped detection. Drug-resistant tuberculosis mycobacteria were the reason why they escaped detection. Research conducted in 4 provinces of the Republic of Karakalpakstan identified a poly-resistant form of tuberculosis in 13% of new cases and in 40% of patients treated for tuberculo-

sis in the past. WHO recommends that areas in which more than 3% of patients have poly-resistant tuberculosis be classified as constituting a "dangerous focus" of the disease. The progress of tuberculosis caused by drug-resistant mycobacteria is difficult to treat, requiring long-term therapy, and leads to the development of chronic incurable forms of the disease.

Poly-resistant tuberculosis can be prevented by implementing a proper TB testing and monitoring program. To improve poly-resistant tuberculosis testing and prevention, WHO recommends continuous treatment using a standard combination of effective drugs.

Hence, the most serious problems regarding the spread of tuberculosis confronting Uzbekistan are:

- the increase in the number of patients with poly-resistant forms of tuberculosis;
- high tuberculosis mortality rates among able-bodied people (aged 25 to 44);
- the risk the population faces everywhere of becoming infected with tuberculosis; the increase in the incidence of TB among people with chronic non-specific pulmonary diseases, diabetes mellitus, stomach ulcer and mental disorders;
- a trend towards greater incidence of TB among people living with HIV/AIDS;
- development of forms of TB virtually unknown 15 years ago (e.g. caseous pneumonia, etc);
- flaws in the system of controlled treatment, particularly out-patient treatment;
- an ongoing shortage of certain anti-TB drugs; and
- the increase in TB mortality rates.

Combating tuberculosis. Uzbekistan's network of anti-tuberculosis facilities is adequate. The network consists of 108 dispensaries, 71 departments in central district hospitals, 37 physicians' offices, 12 independent hospitals, and 26 TB sanatoria. In addition, there are 77 educational facilities for TB-infected children and adolescents, 64 for pre-school children and 13 for school children. Thanks to implementation of the DOTS strategy in 2004, availability of medical equipment (microscopes, X-ray and office equipment) has improved significantly.

Changes made in 2004 in the way patients are grouped in anti-tuberculosis dispensaries significantly improved registration and care of TB patients.

At present 1,451 doctors are employed at anti-TB facilities but their staffing rate remains low – only 55.5%. Recently 1,670 TB medical assistant ('feldsher' in Russian) staff positions were introduced for performance of most of health provider duties for out-patient treatment and oversight of timely administration of anti-TB drugs.

In total, 15,525 beds are available for treatment of TB patients, including 4,510 sanatoria beds, and 1,158 (10.5%) for children. Special pre-school facilities for 6,410 young children and boarding schools for 3,710 older children are in operation so that those children and adolescents can be removed from TB foci and treated.

The major role in combating tuberculosis is played by an integrated therapy using 4-5 drugs. The Phtisiology and Pulmonology Research Institute, the National DOTS Center and Training Center for TB Control and Prevention as well as a reference laboratory have been set up and are in operation. Implementation of the DOTS strategy was begun in Uzbekistan in 1998 and currently covers over 80% of the population. A program to curb tuberculosis in the penitentiary system is being implemented. A controlled course of chemotherapy is contributing to stabilization of tuberculosis morbidity among this group of TB patients.

TB prevention is particularly important in the fight against tuberculosis. In 2004 99.5% of newborns received BCG vaccinations, 97.8% of 7-year-old and 14-year-old children were re-vaccinated. Some 83% of

children who have had contact with TB patients were enrolled in special facilities and sanatoria for children. Chemoprophylaxis, a course of preventive medication given to 86.6% of those who have come into contact with TB, plays an important role in combating the spread of tuberculosis.

The tuberculin test is the main method used for early diagnosis of TB infection and its morbidity rate among children. Due to tuberculin shortages in 2004, tuberculin test coverage dropped that year to 73%, compared with 79.3% in 2003. The tuberculin sensitivity indicator nationwide increased from 49.1% in 2003 to 51.2% in 2004.

Fluorography is the best method of early TB diagnosis among adults and adolescents. There are 376 photofluorography units in the country, 341 (90.6%) of which are in operation. In 1995 the Ministry of Health of the Republic of Uzbekistan issued definitions of groups at risk for TB. Since 1999, in accordance with a Resolution of the Cabinet of Ministers of Uzbekistan, women of reproductive age, retirees, disabled people, single and elderly people underwent fluorographic examination.

Box 2.8

In April 2006 the EU/UNDP funded Enhancement of Living Standards (ELS) Project in Karakalpakstan conducted qualitative research in 11 communities on the perception of TB and the problems it causes. The ELS Project undertook the study because the 11 communities, supported by the ELS project, had identified TB as the main problem hampering their socioeconomic development.

The communities participating in the project prioritized interventions to rehabilitate their rural health infrastructures through community involvement in TB management and care. The communities are small rural settlements of about 1,500 people whose standard of living is lower than that in other regions of Uzbekistan and Karakalpakstan. To begin to address the TB problem and help achieve the national MDG Combating HIV/AIDS and tuberculosis, the ELS Project facilitated 8 focus group discussions and 13 in-depth interviews. Focus group participants and interviewees were ordinary community members, ex-TB patients and health care workers based in a primary health care facility.

The study shows that TB is perceived as a dangerous disease that causes major health and economic problems for communities. Poor people get TB more easily than wealthy people and TB keeps them poor. Knowledge about TB, and about its causes and cure is poor. People generally believe that TB is caused by sharing household utensils with TB patients, drinking cold water and swimming in cold water. Some focus group participants believed that TB is a hereditary disease. Many thought that TB can and should be diagnosed and treated only in a hospital by a specialized doctor and not in the communities.

The DOTS strategy components for managing TB are poorly practiced in the communities. This is partly because people don't believe these components are effective in diagnosing and treating TB, and in part because people are not aware of these components at all. However, DOTS, if properly implemented, would substantially reduce users' costs and increase the accessibility to TB treatment and care.

Presently, because of financial problems that make it difficult for people to afford the costs to pay for their own treatment, they continue to get ill, spreading TB and dying of a curable disease. Ignorance and stigma also play a big role. In some case people do not recognize that they are ill, in others they are too ashamed to consult a health worker. Delaying therapy, and ignoring or hiding the disease invariably have bad consequences for the sick, their families and communities.

The findings of the study reveal that greater familiarity with TB and DOTS strategy would go a long way toward addressing the immediate problems posed by TB in many communities. Communities also need more help in addressing the stigma associated with TB.

The ELS Project in Karakalpakstan will support the establishment of a community based TB case detection and treatment support system to improve access to good quality TB care in those communities. The project will help design a community based TB care system in cooperation with representatives of the communities, primary health care facilities and TB services.

Community representatives and health care workers of primary health care facilities will be trained as community TB mobilizers/TB treatment supporters. In developing the training curriculum for the community mobilizers and health education materials, the ELS Project will use the recommendations and findings of the qualitative research done as part of the Project, national materials that are available and international guidelines on TB management and community contributions to TB care.

In recent years, due to the depreciation of fluorography units, an inadequate supply of X-ray film and chemical reagents, the annual fluorography coverage of the target groups decreased from 78.2% in 1999 to 73.2% in 2004. This has led to late diagnosis of pulmonary TB, an increase in the proportion of patients discharging TB bacilli and a deterioration of the TB epidemiological situation as a whole. In order to increase the efficiency of fluorography examination of the population the annual coverage of targeted adults should be at least 80-90%.

Uzbekistan's Strategic Program to Reduce Tuberculosis Morbidity and to Prevent Tuberculosis for 2004-2008, approved in 2003, estimates that 70% of TB cases will be diagnosed early and that 85% of TB patients will recover. National government officials view implementation of the Strategic Program as meeting one of the MDGs.

Hepatitis

Viral hepatitis (VH) has been endemic in Uzbekistan since the 1960s when extensive agricultural use of highly toxic phosphorus chloride compounds disrupted the environmental balance. The resulting soil, water and air pollution produced wide-scale poisoning and immunodeficiency within the population of Uzbekistan.

Between 1963 and 1987 the VH rate per 100,000 population was 1,250-1,500 cases, and even higher. The morbidity rate among children between 1 and 14 years old was 1,400-2,200 cases per 100,000 population. At that time there were no specific, highly sensitive laboratory methods for diagnosing all forms of VH. VH, when undiagnosed, frequently took on chronic forms and contributed to the dangerous infection's spread throughout the country.

It was long believed that 65-85% of all cases of viral hepatitis registered in the country were hepatitis A (VHA), with 90-93% of those reported in Tashkent-city. Later a more precise enzyme-linked immunologic assay made it possible to determine that only 31.3% of all cases are VHA, while 30.3% are hepatitis B (VHB), 6.2% are hepatitis C (VHC), and 4.8% are hepatitis D (VHD). The enzyme-linked immunologic assay also determined that another 26.4% of all cases were mixed hepatitis, i.e. combinations of VHA, VHB, and VHC. The prevalence of hepatitis B and C, considered the most dangerous forms of hepatitis because they cause cirrhosis of the liver and liver cancer, has recently increased. The number of VHC carriers has quadrupled.

The rate of chronic hepatitis is 23-27 per 100,000 population, while the rate of Hbs antigen carriers is 42.3 - 54.2. Conversion of acute VHC into chronic VHC is

reported five times more frequently than that of acute VHB into chronic VHB. The atypical form of VHC is often not diagnosed because its symptoms are minor, while 71.4% of cases of VHC are chronic VHC.

Lack of high quality testing systems for identifying infectious hepatitis leaves many hepatitis patients incompletely cured who then act as hidden carriers who spread the infection. The situation is made worse by the fact that no screening for VHC and VHB carriers is done, and chronic hepatitis foci screening is not done either.

So far the following ways of transmitting VHB have been found: injections - 42.3 % of cases; dental procedures - 9.2%; surgery - 8.3%; obstetric or gynecological procedures - 6.3%; laboratory test procedures - 2.4%; and blood transfusions - 2%. VHC transmission occurs via injections - 29.5%, surgery - 10.4%; and use of blood and blood components - 9.5%.

Hence, 50-70% of all cases of VHC and VHB are transmitted through medical procedures. And yet health care institutions in the Republic of Uzbekistan are not taking proper preventive measures to reduce the transmission. Uzbekistan has 935 centralized sterilization units (CSU), of which only 366 (39.1%) are not in substandard buildings. The situation is worst in the Republic of Karakalpakstan where only 5.6 % of CSUs are not in substandard buildings. The indicator is low in other provinces, as well: only 18.1% in Samarkand province, 36.8% in Navoi, 36.8% in Syrdarya, and 39.3% in Tashkent province are not in substandard buildings. 71.2% of CSUs have centralized cold water, while 41.5% have hot water.

The urgency of the situation requires a number of immediate program measures which should include:

- provision of health care institutions with testing systems for prompt diagnosis of all forms (A, B, C, and D) of VH;
- development of an effective infectious hepatitis prevention system, to include a package of measures to prevent VH transmission during various medical procedures and a public prevention awareness program;
- improvement of CSU logistic capacity to create conditions needed to keep CSU operations from spreading VH;
- upgrading the skills of physicians specializing in the treatment of VH.

2.6 Environment and Health

According to a WHO report published June 5, 2006, about 24% of the diseases and 23% of the deaths that occur worldwide, all of which could have been prevented, are caused by exposure to environmental factors. The annual death toll attributable to environmental degradation is 13 million lives. Adverse environmental factors are also the cause of one-third of the diseases in children under age five. Environmental degradation can harm not only the health of those alive today but can also inflict harm on future generations by damaging the gene pool. Many congenital diseases, pathologic conditions and physical underdevelopment of newborns are associated with environmental degradation.

Adverse environment is a major cause of mortality from malaria, infectious diarrhea, respiratory diseases, and injuries. Improvements in sanitation and hygiene and in the quality of drinking water could have reduced mortality from malaria by over 40% and that from diarrhea by 94%. Measures to prevent air pollution and combat passive smoking, as well as the use of cleaner safer fuels could decrease the respiratory disease mortality rate significantly. Proper city planning can make it possible to reduce the number of traffic deaths.

On the whole, as WHO data show, reducing environmental risks can save the lives of four million people per year, including the lives of two million children under 5 years old.

A safe environment is one of the basic factors conducive to human health. Today it is becoming more and more evident that clean air and water are no less important for an individual's health protection and survival than food and shelter are.

The quality of drinking water and recycling of wastes remain difficult public health care and social hygiene problems.

Efforts to combat environmental pollution from microbiological, toxic, physical and various pathogenic agents is a major aspect of health care and continues to be a major social problem.

Public health care practices and policy are focusing more and more on environmental pollution and poor sanitation and hygiene in the workplace.

Since the 1960s the public's concern about environmental problems and its awareness of the importance of environmental problems have grown. The concept that the public has the right to be informed about the condition of the environment has spread just as ideas relating to good nutrition and healthy life-style as a part of public health care have made many countries

pay more attention to environmental problems in the broad sense of the word. Air, water and soil pollution as well as sanitation and hygiene in the workplace are so widely discussed by the mass media, NGOs, and government agencies that they have become part of the culture. The growth of the consumer rights protection movement has also forced governments and industrial corporations to pay more attention to environmental protection.

Nature and society are interrelated and interdependent. Environmental problems still beset mankind; some of them can be resolved by one country alone, others require the joint efforts of the entire international community. Local interventions also play a role in environmental protection globally. Close governmental cooperation – on all levels – with NGOs, the mass media, volunteer groups interested in nature conservation will be needed to resolve these particular problems.

The level of sanitation and of epidemiological well-being is an overall indicator of, on the one hand, health status (demographic indicators, morbidity rate, disabilities, level of physical development) and, on the other hand, state of the environment (air and water pollution, pollution of food products, and degradation of conditions in the workplace, in the home, and in recreation areas).

A population's health status is an asset which is difficult to make up for and one that has recently become a factor limiting social and economic development both locally and nationally. Multi-component environmental pollution causes a wide range of adverse effects on health necessitating the selection of health indicators useful in resolving various problems of human ecology and environmental hygiene.

Recent changes in social and economic conditions have led to the development of new regular processes in public health care. Health experts of the Republic of Uzbekistan have confirmed that environmental conditions mainly are what determine the direction of the "environment - health" vector.

An analysis of the sanitation and epidemiological situation in the Republic of Uzbekistan shows that some of the most important health and habitat indicators have stabilized, or even improved, over the past decade.

Many problems have to be solved in order to ensure the health and epidemiological well-being of the population living in Uzbekistan's provinces. But since resources are limited, it is hardly possible to undertake all treatment and preventive interventions at once. Environmental protection and public health problems must therefore be prioritized.

Solutions to environmentally related public health problems need to be linked to specific morbidity structure factors. For instance, the highest prevalence of endemic goitre was recorded in Samarkand province and Surkhandarya. In other provinces, endemic goitre ranked fifth on the list of the eight most problematic diseases. A substantial number of women of reproductive age suffer from iron deficiency anaemia.

The rates of acute diarrhea and hepatitis are still high among children because of, in addition to other causes, poor access to safe drinking water. Respiratory diseases in children rank highest in the overall morbidity structure in the majority of Uzbekistan's provinces. Diseases, such as blood diseases and diseases of the hemopoietic organs and of the endocrine system weigh heavily in the morbidity structure.

Considering the morbidity structure, efforts need to be focused on solving the following high priorities to mitigate the adverse impact of the environment on human health:

1. Elimination of micronutrient deficiencies caused by low micronutrient levels in the water and soil through implementation of programmes to reduce the iodine, iron, and vitamin A deficiencies described earlier in this report.

Nutrition is closely linked with the issue of ensuring the quality and safety of food products, an issue which gained new recognition in the Republic of Uzbekistan after the Law On the Quality and Safety of Food Products was enacted. The share of food samples failing to meet hygiene standards is stable: in terms of microbiological characteristics roughly 6% (5.22%) failed in 2004, in terms of cleanliness and chemical characteristics again about 6% (5.9%) failed in 2004.

2. Broad public access to sources of safe water. In recent years water quality in category I and II bodies of water has not changed significantly. The share of water samples that did not meet hygiene standards for microbiological indicators in 2004 was 10.7%, and the share not meeting sanitation-chemical standards was 18.1%. The staff of the Sanitary-Epidemiological Surveillance Service of the Republic of Uzbekistan are constantly checking drinking water quality because one of the main components of public safety is a safe water supply.

The share of water quality samples taken from communal water supply systems of the Republic of Uzbekistan not meeting hygiene standards is relatively stable. In 2004 16.3% did not meet chemical standards and 5.5% failed to meet microbiological standards. The highest rates pertained to the level of mineralization of potable water: in 2004 in Bukhara province the rate was 46.7%, in Khorezm province it was 24.8%,

and in the Republic of Karakalpakstan it was 26.2%. The share of water samples not meeting the microbiological standards in Bukhara province was 9.5%, in Namangan province it was 11.1%, in Syrdarya province it was 14.7%, in Khorezm province it was 9.2%, and in Surkhandarya it was 9.6%. A similar trend was reported for potable water samples taken from commercial water supply systems.

3. Adopting tougher restrictions on industrial emissions to reduce the exposure of water and air to anthropogenic factors.

It is generally known that a decrease in the concentration of environmental pollutants can stabilize overall morbidity rates among the population and reduce the prevalence of some diseases. The Sanitary-Epidemiological Surveillance Service therefore monitors not only population health status but also measures levels of harmful substances at individual environment sites.

The share that motor vehicles contribute to air pollution in most cities of the Republic of Uzbekistan now exceeds 60% and is expected to increase because the growth rate of motor vehicle pollution is relatively higher than that of industrial pollution. There is almost no way of determining the share of motor vehicle pollution in urban air pollution just as there is no way of telling how many citizens are exposed to its harmful effects. Determination of the level of motor vehicle pollutants in ground air is of great importance in that motor vehicle pollution does more to degrade dispersion conditions than fixed sources of pollution do, thus causing a sharp rise in pollution in areas adjoining major roads. Urban ambient air research findings showed that MPC values were exceeded by 17.0% in 2004 and 18.3% in 2003; in villages, MPC values were exceeded by 18.1% and 9.4% in 2004 and 2003, respectively.

4. Reduction of occupational diseases rate

In most branches of the economy working conditions remain unsatisfactory, resulting in the development of occupational diseases. 153 cases (38 were women) of chronic occupational illness were registered in 2003; 156 cases were registered in 2004 (24 were women). The rate of occupational diseases per 10,000 population employed at industrial, transport and agricultural enterprises was 0.45 in 2004, compared with 0.48 in 2003.

The causes of development of occupational diseases are as follows: industrial aerosols, physical/psychological overload, overstraining of certain organs and systems of the human body, and physical/chemical/biological agents. The highest occupational disease rates were reported by the aviation industry (14.49 in 2003 and

7.24 in 2004) and by Uzbekistan's national airline Havo Yulari (21.7 in 2003 and 24.6 in 2004). The highest rates of chronic occupational diseases were reported among employees of the National Committee on Geology (3.49 in 2003 and 4.62 in 2004), Uzlegprom (light industry) (1.53 in 2003 and 1.17 in 2004), Press Agency (2.02 in 2003 and 4.14 in 2004), Uzenergy (2.4 in 2003 and 1.79 in 2004), among others.

In the occupational disease morbidity structure, chemical, physical and biological adverse industrial factors prevail.

Given the uncertainty of environmental and hygienic factors, next steps should include:

1. further improvement of legislation and laws for assessing public health risk factors relating to environmental degradation (air and water pollution, pollution of food products, and degradation of conditions in the workplace, in the home, and in recreation areas);
2. training/re-training of personnel in public health risk assessment;
3. improvement of logistics of the Sanitary-Epidemiological Surveillance Service; and
4. further integration of the environmental protection and the health care sectors to resolve problems of environmental protection and public health care.

CHAPTER 3.

PUBLIC HEALTH IN UZBEKISTAN

3.1 Health Status

Life Expectancy

Global situation. Leading a long and healthy life is a basic human capabilities indicator. Inequalities with regard to this indicator have a fundamental bearing on an individual's well-being and opportunities. Since the early 1990s the long-run trend towards convergence of life expectancy between rich and poor has slowed due to a divergence between regions linked to HIV/AIDS and due to other setbacks.

Viewed at the global level, the life expectancy gap is still narrowing. Between 1960 and today life expectancy increased by 16 years in developing countries and by 6 years in developed countries. Since 1980 the gap has narrowed by two years. However, this convergence has to be put in context. Fully twenty-one months of those two years occurred before 1990. Since 1990, convergence has ground to a halt, and the gaps remain very large. The average life expectancy gap between a low-income country and a high-income country is still 19 years. Someone born in Burkina Faso can expect to live 35 years less than someone born in Japan, and someone born in India can expect to live 14 years less than someone born in the United States.

The explanation of the slowdown in progress towards greater global equality in life expectancy can be found in Sub-Saharan Africa. Twenty years ago someone born in Sub-Saharan Africa could expect to live 24 years less than a person born in a rich country, but the gap was shrinking. Today that gap is 33 years and growing. HIV/AIDS is at the heart of the reversal. In 2004 an estimated 3 million people died from the virus, and another 5 million became infected. 70% of those deaths were in Africa alone, with most of the rest in the developing world. Of the 38 million people now infected with HIV—25 million are in Sub-Saharan Africa.

In the countries of the former Soviet Union life expectancy has plummeted dramatically, especially for males. In the Russian Federation life expectancy for males has dropped from 70 years in the mid-1980s to 59 years today—lower than in India. Economic col-

lapse, the erosion of welfare provision and high rates of alcoholism and disease have all contributed to the drop. Noncommunicable diseases—such as cardiovascular disease - and injuries account for the greatest share of the rise in deaths, though infectious diseases are also resurgent. If the death rate remains constant, about 40% of 15-year-old Russian males today will be dead before they reach the age of 60.

Human health status is assessed by a number of indicators. Some of them are “rigorous,” e.g., morbidity, mortality, disability rates; others are assessed subjectively by the individual himself or herself, e.g., living standard indicators. However, these indicators are not always available and are hardly comparable. Therefore, the life expectancy at birth indicator is the main criterion for characterizing a population's health status

The situation in Uzbekistan. Uzbekistan's relatively high life expectancy reached 72.5 years in 2004 (compared with 69.3 in 1990), while between 1990 and 2004 the nationwide difference between life expectancy for men and women dropped an average 1.9 years to 6.3 and 4.4, respectively.

Life expectancy in Uzbekistan is higher than in other CIS countries. For instance, in Russia it is 66.7 years, in Belarus – 69.9, in Ukraine – 69.5, in Kazakhstan – 66.2, and in Kyrgyzstan -- 68.4. Meanwhile, average life expectancy in developed countries is higher than it is in Uzbekistan, ranging from 75 to 82 years. Total overall morbidity and mortality rates must be brought down and child mortality rates must be brought down significantly in order to bring about an increase in life expectancy.

Table 3.1
Life expectancy (in years) at birth in the Republic of Uzbekistan (years)

	1990	2000	2003	2004
Both sexes	69,3	70,8	71,6	72,5
Male	66,1	68,4	69,4	70,0
Female	72,4	73,2	73,8	74,7

Source: the National Committee on Statistics

Morbidity of the Population

In recent years morbidity rates have decreased for groups of diseases diagnosed for the first time in a patient's life, thanks to implementation of wide-scale Government programs designed to create decent living conditions for the population. For example, morbidity rates are down for: infectious and parasitic diseases by nearly 41% compared with 1995, respiratory diseases by roughly 41%, congenital abnormality cases by 22%, and neoplasms by 20.8%, etc.

Meanwhile, Uzbekistan still bears the so-called "double burden" of having to bear not only the burden of the infectious diseases listed above but also the burden of a significant proportion of the non-infectious diseases common in developed countries. People seek health care assistance for diseases that for a number of years have constituted a sizable share of the general morbidity structure, e.g., respiratory system diseases, blood diseases and hemopoietic organ diseases, gastrointestinal diseases, and nervous system and sensory organ diseases.

Infectious diseases such as diarrheal diseases and acute viral hepatitis remain a serious problem in hot months, although their incidence has been reduced

thanks to better access to good quality drinking water and to concerted sanitation and anti-epidemic efforts.

Timely immunizations have had a major success in reducing the incidence of infectious diseases for which vaccines exist.

In managing effective public health care services with proper health care facilities it is important to take into account the social and hygienic characteristics of the population, people's income, housing conditions, and family structure. In Uzbekistan that means building a health care system with strong emphasis on family health care services. The system is being developed, first of all, in the country's rural areas and will be introduced in out-patient facilities in a few pilot regions (Tashkent, Margilan, Gulistan, and Samarkand) in 2006.

Table 3.2

Morbidity rates of major disease groups (new cases per 100,000 population)

Disease groups	1995	2000	2002	2003	2004
Total	49365,5	41360,8	44833,5	46418,3	47583,6
Infectious and parasitic diseases	2198,4	1468,7	1373,5	1319,6	1308,4
Malignant neoplasms	235,7	203,0	196,3	198,3	186,7
Endocrine system; nutrition; metabol and immunity disorders	1329,8	2480,4	3074,8	2812,5	2992,9
Diseases of the blood and hemopoietic organs	3138,3	6198,7	7384,4	8231,1	8248,0
Mental diseases	143,5	310,8	239,1	213,4	216,1
Diseases of the nervous system and sense organs	3903,1	3585,3	2557,2	2081,9	1990,8
Circulatory diseases	1134,9	1209,0	1276,1	1313,8	1432,5
Respiratory diseases	20568,9	11490,9	12295,3	12239,3	12258,9
Digestive system diseases (Diarrheal diseases)	5702,0	4669,0	5174,0	5476,4	5802,6
Genitourinary diseases	1822,0	2237,2	2383,9	2422,6	2587
Complications of pregnancy and delivery, post-natal complications (Maternal conditions)	3771,1	2494,8	2916,6	3016,7	3109,8
Skin and subcutaneous tissue diseases	3110,4	2436,4	2256,6	2292,7	2355,4
Diseases of the musculoskeletal system and connective tissue	1271,9	795,9	764,2	826,0	871,9
Congenital abnormalitie	77,3	72,8	52,7	59,1	60,3
Perinatal conditions		25807,2	26755,8	25645,4	24619,7
Injuries and poisoning	3646,0	2900,7	3108,0	3313,2	3441,0

Source: the National Committee on Statistics

Table 3.3

Infectious disease rate per 100,000 population

Disease	1992	1995	2000	2001	2002	2003	2004
Typhoid fever	3,7	2,1	0,7	0,75	0,5	0,3	0,3
Bacillary dysentery	61,9	62,1	19,8	19,5	19,2	15,1	13,6
Acute intestinal diseases	524,3	400,0	181,1	170,0	158,4	133,8	128,5
Viral hepatitis	644,3	710,7	234,7	160,9	132,1	114,9	145,9
Viral hepatitis A	511,1	616,7	201,4	135,1	112,0	99,9	132,1
Viral hepatitis B	133,2	94	29,8	24	18,8	13,7	11,6
Poliomyelitis	9,4	1,3	0,3	0,1	0,1	0,3	0,3
Scarlet fever	7	1,2	0,3	0,2	0,3	0,2	0,1
Epidemic parotitis	10,4	5,4	2,2	2,9	3,4	3,4	3,0
Diphtheria	17,2	34,1	18,1	26,8	40,9	21,2	8,9
Tetanus	0,13	2,8	0,01	0	0	0	0
Pertussis	0,1	0,01	0	0	0	0	0
Measles	0,1	0,004	0	0	0	0	0

Source: the National Committee on Statistics

Treatment of the Disabled

Any society's civilization is determined, first of all, by its attitude to the most vulnerable groups in its population, e.g. the disabled.

The problem of disabilities and the disabled is one of the priorities of the Republic of Uzbekistan's social policy which sets the level of social welfare delivered to the country's overall population as well as to its socially vulnerable groups.

The Law On Social Security for the Disabled in the Republic of Uzbekistan was adopted November 20, 2001. The term "disabled person" is defined in the first clause of the law as follows: a disadvantaged individual is one whose activities in life are limited due to physical or mental disabilities requiring social care and protection. Disabilities are understood to mean complete or partial loss of one's ability/opportunity to care for oneself, move about independently, be aware of one's surroundings, communicate with others, exercise control over one's behaviour, and to work. The Medical and Labour Commission, in accordance with a ruling handed down by the Cabinet of Ministers of the Republic of Uzbekistan, determines whether an individual is disabled.

The gravity of the problem is borne out by official statistics: over 800,000 disabled people are registered with the country's Social Security offices. According to WHO, there are over 6 million disabled people in the world, i.e. on average 8% of the world's population. In developed countries, roughly 10% of the population is disabled. As of early 2004, over 11 million people in

Russia - about 9% of Russia's population -- were classified as disabled. Rehabilitation rates of the disabled in the Russian Federation remain low (2-3% of those undergoing a repeat examination). In EC countries the rehabilitation rate is 1 – 1.5%.

These statistics reflect the magnitude of the problem posed by disabilities and demonstrate the necessity of adopting a state action plan that targets both the disabled and their social environment to reintegrate them into the mainstream of society. The few positive trends achieved in dealing with disabilities have not been able to raise disability indicators, adding a sense of urgency to the problem of disabilities.

By virtue of its having ruled for the first time that rehabilitation of the disabled shall become the legislative norm, the Law on Social Security for the Disabled in the Republic of Uzbekistan not only set forth a disabilities legislative framework but also outlined strategic milestones, which are new in principle, for the Government's social policy toward the disabled. Other regulatory and procedural documents were drafted to implement the above-mentioned law and Resolution no. 433 of the Cabinet of Ministers of Uzbekistan of November 11, 1995, On the State Programme of the Republic of Uzbekistan on Rehabilitation of the Disabled in 1996-2000. In accordance with the Resolution, a network of rehabilitation centres (RC) has been set up in Uzbekistan as part of the Ministry of Labour and Social Security of Uzbekistan: two RCs in Tashkent-city, one of which is a research institution with a hospital, and another 10 RCs in the provinces, with a total number of 720 beds.

Following is a list of problems in developing the public rehabilitation services for the disabled in Uzbekistan:

- there is no common rehabilitation system for the disabled to co-ordinate and guide (provide for succession and continuity) activities of the various agencies and institutions responsible for the medical, vocational, social, and psychological rehabilitation of the disabled;
- the legal status of and demand for rehabilitation institutions have not been stipulated;
- a basic rehabilitation programme has not been adopted;
- a system of evaluating the effectiveness of implementation of individual rehabilitation programmes (RP) has not been developed, nor has the number of RCs required to support RPs been calculated;
- there is no systematic approach to rehabilitation of the disabled in terms of co-operation among institutions under different ministries (there is no succession and continuity in rehabilitation measures);
- no national market exists to monitor quality control of specific products and technical devices produced for the disabled by the rehabilitation industry;
- national, provincial, district and local government powers are not clearly differentiated;
- no procedural or technical standards exist for the medical, vocational, social and psychological rehabilitation of the disabled.

The Government honours every day and everywhere its guarantees of the legally specified rights of the disabled to rehabilitation, rights which are of vital importance to the disabled. It is our belief that the practice of referring a patient to an RC only after the Medical and Labour Commission has examined that patient and made a special notation that that patient exhibits “a high rehabilitation potential” constitutes an infringement of that patient’s rights to rehabilitation as a disabled person and thereby constitutes a violation of the Law On the Health of Citizens of the Republic of Uzbekistan.

Unfortunately, the problem of training personnel for rehabilitating the disabled cannot be resolved until the field of rehabilitating the disabled has been established and recognized as a separate field of scientific and practical endeavour.

Mental health care. According to WHO data, about 450 million people have mental or behavioural disorders; mental disorders account for 12% of the global disease burden while allocations budgeted for treatment of mental diseases in most countries exceed 1%.

The problem of the mental health of the people of

Uzbekistan is not only a medical problem. It is a social problem as well which depends on social, economic and environmental factors as well as the standard of living in Uzbekistan. Mental health care is one of the priorities of the Ministry of Health of Uzbekistan. However, some restructuring needs to be done to create a humane system of psychiatric services that respect patient rights. This will necessitate improving the training psychiatrists receive to change their professional value system.

Principles for improving the mental health of the population are currently based on two concepts related to human rights. First, each individual, including individuals suffering from mental disease, has the right to be treated with respect and decency out of deference to his or her dignity as an individual. Second, the law must set forth procedures for making psychiatric decisions limiting an individual’s freedom. In order to protect patient rights when psychiatric decisions are made regarding mental health care, a legal basis will have to be put in place incorporating principles and norms specified in human rights documents. The Law on Psychiatric Care was adopted August 31, 2000 at the third session of the Parliament of the Republic of Uzbekistan. Under this law, when citizens of the Republic of Uzbekistan receive psychiatric aid, their rights and interests are protected by special norms and procedures. The Cabinet of Ministers of the Republic of Uzbekistan has adopted a number of resolutions to develop interdepartmental cooperation to improve mental health care. The Ministry of Health of the Republic of Uzbekistan has prepared the following documents: Ruling on Measures to Further Improve Psychiatric Care for Uzbekistan’s Population, in addition to 54 rules and regulations governing activities of the Psychiatric Service. The Association of Psychiatrists of Uzbekistan, founded in 2002, became a member of the World Association of Psychiatrists in 2003. Thus, progressive mental health laws provide legal system support for finding solutions to the most important problems affecting the quality of life of people suffering from mental disorders.

Positive highlights in the development of the Psychiatric Service in recent years have been:

- mental health protection centres known as “SKAL – psychiatry centres,” psychiatric homes-hospitals, and the Infant Psychiatry Service were established;
- an independent children’s psycho-neurological hospital with a school and sanatorium was opened in Tashkent-city in 2002;
- access to in-patient and some kinds of non-hospital care for the population has been improved as psychiatric services have become more integrated into the primary health care system;

- Administration of psychiatric institutions has improved; the International Classifier of Mental and Behaviour Disorders (10th revision) has been adopted and is being used in practice.

Table 3.4

Selected mental health care statistics for Uzbekistan, 2005

Psycho-neurological facilities	18
Provincial mental health centers	2
Out-patient facilities which have psycho-neurological offices/departments	249
Offices of psychotherapy	13
Mental hospitals for mental diseases	12
Beds for psychiatric patients (all ages)	8069
Beds for psychiatric patients (children only)	685
Beds for mentally ill TB patients	382
University departments of Psychiatry	9
Psychiatrists	966
Prevalence of psychiatrists per 10,000 population	0,34
Number of people under one form or another of mental health care	352 709
Prevalence of mental disorders among population	1,347.9 ppm
Visits to psychiatric facilities (including preventive check-ups)	3, 940,000
Number of mentally disabled	76,468
Mobile teams rendering specialized off-site psychiatric first aid	17

Special attention is devoted to the development of psychotherapeutic and suicide prevention services in the Republic of Uzbekistan. This is explained by the fact that suicide prevention depends not only on theoretical concepts and diagnostic methods but also on organisational prerequisites associated with them. The number of suicides committed in the Republic of Uzbekistan has never reached the “critical” level defined by WHO as 20 per 100,000. However, suicide is an urgent problem. Ministry of Health of Uzbekistan Order no. 559, issued September 23, 1999, and no. 609 On Improvement of the Suicide Prevention Service, issued November 22, 2000, were important prevention measures. The Service includes: the Center for Suicide Prevention Management Methodologies, a Crisis Hospital, offices for social and psychological assistance, and Confidential Help Lines (set up in 14 provinces of the country). Crisis Centres have been opened in emergency hospitals in Tashkent-city, Dzhizzak and Fergana Provinces. The Suicide Management Methodologies Center was set up as part of the

National Scientific Centre for Emergency Assistance.

The Ministry of Health of the Republic of Uzbekistan (UzMoH) Europe Office of WHO are cooperating on a priority basis on a Biennial Agreement on Cooperation in Mental Health Protection. The first part of the Agreement, the European Declaration on Mental Health Care, was signed in Helsinki in January 2005. An international conference on developing a National Mental Health Programme in which the EuroWHO advisor, Russian experts, and members of the Uzbekistan Parliament participated was held in November 2005. The Programme will contribute to further developing and improving psychiatric services in Uzbekistan.

In 1950 the Expert Committee on Mental Health Care of WHO defined the minimum demand for psychiatrists as 1 physician per 20,000 population (in Uzbekistan there are at least 1,300 practicing psychiatrists).

3.2 Determinants of Health

Demographic Factors: mortality and fertility

Demographic data are widely used in making overall health status assessments, making science based projections, and managing health care.

Demographic data about an area to be provided with health care services, including population structure data, are just as important as that area’s demand for health care services usually, determined by medical facility registration data.

The demographic impact on a population’s health status is obvious in that the need for health care facilities and the location of those facilities across the country depend on the number of people to be served and on population density because:

- Subdividing a population into urban and rural is necessary when planning a network of health care facilities, planning for the number of physicians needed, and organizing tertiary (specialized) level health care services. Population density and distribution need to be considered to properly establish health care facilities;
- The age and gender structure of a population significantly influence specialized health care facilities, e.g. obstetric facilities depend on the relative number of women of reproductive age and of newborns; the number of in-patient and out-patient hospitals for children depends on the proportion of children in a given area; and the number of hospitals specializing in the treatment of diseases associated with the elderly depends on the number

of elderly (retired) people in a given area.

- It is critically important to take fertility into consideration in managing obstetric clinics, children's hospitals, as well as children's immunization programs.
- Infant, child and maternal mortality rates are related to the number of children in a population and fertility. How many children are in a population and a population's age structure are important in establishing and running various children's facilities with specific health care and therapy services.
- The number of elderly people influences overall morbidity and mortality rates. An increase in the proportion of people over 60 years old can lead to a reduction in the fertility and increase the overall mortality rate; cardiovascular diseases and malignant neoplasms are the leading causes of mortality now. An increase in the number of senior citizens using out-patient hospitals requires analyzing patient visits in terms of which physicians specializing in which medical specialty were visited, causes for the visits, and season of the year. The role of health care services rendered at home is increasing. A change in the age structure of patients treated at in-patient hospitals can prolong the period of hospital stays and, perhaps, raise in-hospital lethality rates.

The degree of urbanization also impacts the types of diseases among a population and, by and large, fertility.

The demographic characteristics of Uzbekistan are as follows:

- 1. Densely populated areas alternating with sparsely populated areas.** As of January 1, 2005, the country's population totaled over 26 million people and had a relatively high average density – 58.2 people per sq. km. Population density is highest in the Fergana Valley whose provinces have only 4% of the country's territory but where 27.8% (over 7 million) of the country's entire population lives, with a density of 415.4 people per sq. km, on average. In Samarkand, Syrdarya, and Tashkent provinces (including Tashkent-city), which comprise 8% of the country's territory, 31.5% (over 8 million) of the population resides, with an average density of 218 residents per sq. km. Another 10 million people inhabit the rest of the country, with population density ranging between 49 people per sq. km in Dzhizzak Province and 83 in Kashkadarya Province. The lowest population density is in Navoi Province and the Republic of Karakalpakstan (only 7 to 9 people per sq. km).

- 2. Predominance of rural population over urban.**

16.6 million people (63.7% of the country's total population) live in rural areas making Uzbekistan's population predominantly rural. The population growth rate is greater in rural areas than in urban areas making it imperative that the network of health care facilities be located primarily in rural areas.

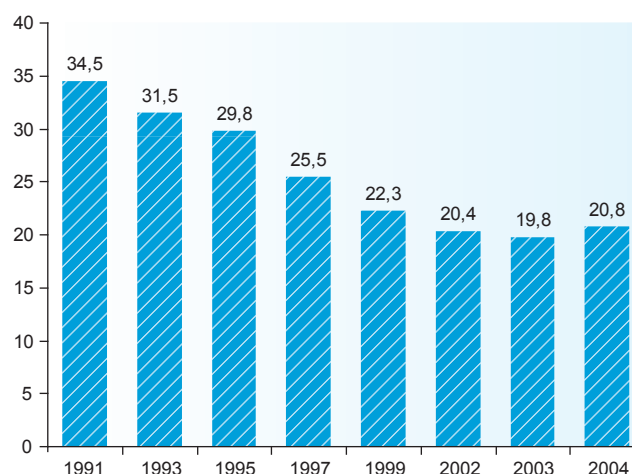
- 3. Sharp reversal of high fertility trend.**

The number of men and women in Uzbekistan is almost equal – 49.9% and 50.1%, respectively. A relatively rapid increase in fertility in 1981-1990 caused marked population growth. Subsequently the fertility began dropping at an accelerating rate until in 2005 it had dropped to 20.6 births per thousand. While the average annual population growth was 2.6% in 1981-1990, it fell to 1.5% in 2001-2005 and to 1.2% in 2003-2005. Fertility decreased in all provinces. In 2004 the lowest fertility was registered in Tashkent-city (16.0 per 1,000), the highest rate was registered in Surhandarya (22.1), followed by Kashkadarya (22.7), Dzhizzak (22.7), Samarkand (22.0) and Khorezm (22.5) provinces. With 540,381 live births in 2004, the number of live births that year was down by 183,000 (25.3%) compared with 1991. The number of births is expected to increase in the next few years as women born during baby boom at reach reproductive age.

- 4. Relatively low mortality rate correlated with relatively few elderly in the population.**

The total mortality rate was 5.0 per 1,000 in 2005. For the previous 10 years it fluctuated between 6.4 and 5.0. The mortality rate for males is 10% higher than it is for females. For people under 50 the mortality rate (4.7 per 1,000) did not exceed the average rate, but it progressively increased among older age groups, reaching a maximum

Figure 3.1
Fertility dynamics in Uzbekistan, 1991-2004



of 85 years and older (140 per 1,000 people of those ages). In provinces with a younger population, the total mortality rate is not high, even though the health status of the population cannot be regarded as satisfactory, and conversely, a high mortality rate in areas with an older population is not necessarily a reflection of poor health status of the population. For instance, the regions with the youngest average age are Kashkadarya (23 years) and Dzhizzak (24.5 years) provinces; which explains why the total mortality rates are lowest there: 4.0 and 4.0 per 1,000 population. The high total mortality rates in Tashkent-city (8.0) and Tashkent province (6.2) are due to the older average ages of their populations (30.9 and 27.3 years, respectively).

Over the past 10-12 years, the nosological structure of the causes of death have not changed signifi-

cantly. Diseases of the circulatory system lead among the main causes of death, followed by, in descending order of incidence, respiratory diseases, accidents, poisoning, injuries, malignant neoplasms, and digestive system diseases. Ischemic heart disease and cerebral stroke are the major nosological components in the structure of deaths from circulatory diseases. The most vulnerable people are those over 45 years old. Myocardial infarction causes more deaths in men than in women, while cerebrovascular diseases cause more deaths among women than men. Deaths from gastrointestinal organ diseases is a problem of serious concern. This pathology can be prevented by proper nutrition and timely prevention of relapses and progress of the disease. Nevertheless, over 8,000 patients die annually from digestive system disorders.

Table 3.5
Birth and mortality ratesm, 2004

	Population, (thousands of people)	Fertility per 1,000 population	Total mortality rate per 1,000 population	Natural growth per 1,000 population
The Republic of Uzbekistan	26021,3	20,9	5,0	15,9
Andizhan	1569,9	22,4	5,2	17,3
Bukhara	2342,7	20	4,9	15,2
Dzhizzak	1507,6	19,4	4,5	14,9
Kashkadarya	1043,3	22,7	4,0	18,9
Navoi	2378,5	22,7	4,0	18,8
Namangan	810,2	20	4,9	15,2
Samarkand	2073,2	20,6	4,7	15,9
Surhandarya	2867,1	22,0	4,8	17,2
Syrdarya	1894,9	22,1	4,0	18,1
Tashkent	672,2	21,2	5,0	16,3
Fergana	2452,3	19,7	6,2	13,6
Khorezm	2840,9	21,1	4,8	16,4
Tashkent-city	1432,8	22,5	4,6	17,9
The Republic of Karakalpakstan	2135,7	16	8,0	8,1

Table 3.6
Structure of mortality by cause, 2004

	Total number of deaths	%
Total	130357	100,0
including:		
Circulatory diseases	71139	54,6
Respiratory diseases	11141	8,5
Accidents, poisoning, injuries	9805	7,5
Malignant neoplasms	9609	7,4
Digestive system diseases	8262	6,3
Other causes	20401	15,7

Healthy Lifestyle

The highest good (summum bonum) for each country's society as a whole and for its individual members should be to develop a global strategy for radically reforming its approach to public health care.

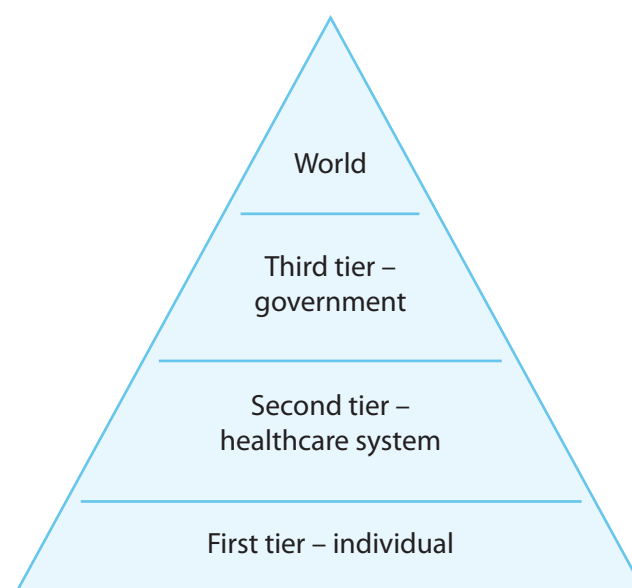
The authors of this report offer their own view of such a strategy, which is as follows.

First, implementation of a public health improvement strategy should be four-tiered to ensure comprehensive coverage of all stakeholders.

Secondly, taking an "ownership" approach to strategy implementation is very important. In this context, ownership in our view means that each party involved in implementing the concept should have an interest in and take responsibility for implementing it.

Thirdly, it is essential to clearly identify the interest and responsibility at each level of the public health improvement strategy, as clarity is needed in developing specific implementation mechanisms.

Interests and responsibilities can be diagrammed as follows:



(HLS) was couched in terms of merely fighting smoking, alcohol, sedentary lifestyle, etc. HLS models were generalized recommendations and were not designed to provide an integrated solution to enhancing the primary objectives of the law is to promote healthy lifestyles and make them popular. It is not surprising that

Table 3.7

Tier	Action level	Interest	Responsibility
First	Citizen	1) Increased life expectancy 2) Higher standard of living	Leading healthy lifestyles
Second	Health care system	1) Effective utilization of financial resources 2) personal satisfaction from public recognition that system works effectively and properly	1) Put priority on preventive health care 2) Promote healthy lifestyles 3) Enhance the quality of health services
Third	Government	1) Healthy citizens 2) Effective utilization of country's health resources	1) Develop preventive, primary, and emergency medical assistance 2) Promote healthy lifestyles 3) Ensure environmental sustainability 4) Promote economic growth and higher income to support healthy lifestyles
Fourth	International (world) community	1) Improvement global security by narrowing the gap between the rich and poor 2) Improved health for all by reducing risk of emergence and spread of diseases	1) Fulfill all obligations under MDG8 (for rich countries) 2) Support UN efforts to facilitate dialogue among nations and harmonization of health systems (worldwide).

Later in this chapter approaches to defining of responsibility for implementation of a three-tiered (the individual, the health care system, and the Government) public health improvement strategy will be elaborated in greater detail.

Article 2 of the Law on Public Health stipulates that one of the prime objectives of the legislation.

Yet for many years the definition of healthy lifestyle

many citizens did not even know about the existence of the healthy lifestyle concept. Only a small knowledgeable group followed this philosophy for themselves, having access to information in foreign media.

It would hardly be appropriate to try to hide the fact that during the challenges of the transition period - with its economic problems and social disruptions of one degree or another - that people's attitudes to their

personal health deteriorated.

Certain unhealthy trends are evident: drug addiction, HIV infection, and the percentage of young smokers, especially school children, are all on the rise. Moreover, increasingly more health problems are due to environmental challenges.

In this context, it is very important to promote healthy lifestyles designed to improve life not only by improving welfare but also by raising educational and cultural standards, and encouraging responsible behavior toward one's own health.

Development of market relations in the health sector, where services used to be entirely free-of-charge, is increasingly forcing the population to appreciate the value of health. Advanced and highly specialized services and medications, in particular, are simply not affordable for many citizens. People are adapting with great difficulties to having to pay for previously free or inexpensive drugs. This leads not only to popular dissatisfaction and frustration but also to poorer health, more chronic diseases, and a lower standard of living.

Introduction of market relations in the health care sector has been accompanied by the gradual development of the individual's responsibility for his or her health typically found in developed countries with a market economy where people are taught from a very early age to value and prize their health as an invaluable asset.

It is becoming increasingly clear that there is an acute need in Uzbekistan to help the population rid itself of previous ways of thinking based on the assumption that "omnipotent and omnipresent medicine" can cover up all "sins" of an unhealthy lifestyle. The public needs to start taking responsibility for its health.

For Uzbekistan, healthy lifestyle traditions are not something new imported from Western culture. Quite the opposite, people should know that our great compatriot Avicenna helped invent HLS in his essay "About the health of the healthy" a thousand years ago. The majority of his recommendations are still valid today.

According to WHO data, longevity and quality of human life depend primarily upon people's lifestyles. Therefore, it is essential for everyone to find harmony and improve their own health.

The public should be provided basic assistance in HLS implementation. Such assistance must be continuous and systemic by involving not only government institutions but also all individuals and communities.

We should insist that a healthy, active, and creative life be one of the main aims of state policy and that a healthy population be recognized as a strategic com-

Box 3.1

Youth sports development in Uzbekistan

Development of sports and athletic movements has a special status in Uzbekistan. The Child Sports Development Fund has been established. Its Board of Trustees is chaired by the President of Uzbekistan. The Fund's activities engage the youth in physical training in all corners of the nation. Dozens of major sports facilities, many pools, hundreds of sports facilities and gymnasiums have been built in a few years. Provincial and national contests among school, high school, college, and university students are conducted traditionally. Holding events such as "Umid Nihollari" – athletic contests for school children, "Barkamol avlod" – traditional contests of vocational college and academic high school students and "Universiada" – athletic contests among national university students have become a part of the country's sports life.

Box 3.2

Functions of the Health Institute of Uzbekistan

Under the Health Institute of Uzbekistan there is a network of institutions for promoting a healthy lifestyle: 14 branches in the provinces, in Karakalpakstan, and Tashkent-city, 156 district and municipal Health Centres, where more than 1,800 people are employed, including 478 doctors, 557 mid-level health workers, and more than 800 other staff. Staffing of these institutions stands at 81.3% and for mid-level health workers at 96.2%.

HLS institutions actively cooperate with the Ministry of Public Education, the Women's Committee, Kamolot Youth Movement, Mahalla Foundation, Oila, Soglom Avlod Uchun, Ecosan public organization, the National Committee for Drug Control, and the media. In order to enhance intersector cooperation, roundtables and large-scale events are held.

In order to increase awareness of various population groups of health issues and fitness, a programme for teaching hygiene to children at pre-school institutions and schools has been developed jointly with the Ministry of Public Education. Health courses were introduced in schools and pre-school institutions across-the-board. A textbook for medical colleges on a healthy lifestyle and Personal Hygiene and Cleanliness Guidelines for school children have been published. Media channels are broadly used. Health related programmes are broadcast on nationwide and local TV channels, and on national, provincial, and local radio stations. On average, 21 TV and 33 radio health shows are aired monthly. Video films and video clips have been developed jointly with national and provincial TV broadcasters, which are periodically broadcasted.

Articles about a healthy lifestyle, and warnings of illnesses are published in the periodical press. A healthy lifestyle column was launched in the national newspaper *Zdravoohranenie Uzbekistana*. A two-volume textbook "Basics of a Healthy Lifestyle" was published.

A youth information website dedicated to health education, prevention of the most prevalent diseases, and preparation for married family life, developed jointly with the Kamolot youth movement, has been designed. Information is being uploaded to the website at www.yoshlik.uz.

ponent of national security, stability, and the public welfare.

Legislative infrastructure must be improved and economic incentives must be provided for public and private institutions, society as a whole and for individual citizens so that health becomes a key factor in determining the country's welfare, culture and values.

For several decades, under the leadership of the Ministry of Health, cleanliness and public awareness activities were implemented by Ministry of Health Units. In the 1980s and 1990s, these units were renamed Health Centers of the Republic with branches in all provinces.

In 2001, in accordance with recommendations of the Health-1 Project implemented with World Bank support, a Health Institute was established with branches in all provinces.

Health Care Services Management System

Health care institutions in Uzbekistan at present consist of:

I. Institutions providing free-of-charge primary care health services

1. Rural doctors' posts (RDP) – replaced the earlier system of obstetrics-medical attendant posts (OMAP), rural outpatient posts (ROP) and inefficient rural precinct hospitals (RPH). An extensive network of RDPs provides all primary medical assistance in rural areas;
2. Municipal outpatient institutions - providers of primary health services to urban residents;
3. Republican and provincial centers, district and municipal emergency medical assistance departments – a completely new type of health care institution providing emergency inpatient medical assistance nationwide. All emergency medical assistance centers are equipped with modern medical equipment and staffed with highly qualified health workers;
4. Child and obstetrics institutions (maternity hospitals), maternity complexes, other than private institutions;
5. Infectious disease, tuberculosis, oncology, psychiatric, drug addiction rehabilitation, and endocrinology facilities.

II. Institutions providing medical assistance with a mixed (state/private/commercial) financial scheme

1. General inpatient hospitals;
2. Specialized hospitals;
3. Government agency outpatient-polyclinic institutions and hospitals.

III. Institutions providing medical assistance primarily on a fee basis

1. Dental clinics
2. Private health care institutions

Hospitals

In accordance with recommendations of international experts, the national inpatient treatment system has been significantly improved through better utilization of beds and budget expenditures.

Municipal, infectious diseases, and other specialized and rural precinct hospitals have been significantly reformed and the number of beds reduced by a factor of 1.5 to 3.

1,165 hospitals with a capacity of 142,900 beds were operating in the country in 2004. The number of hospital beds per 10,000 persons stood at a national average of 54.9, but varies widely: 44.9 beds per 10,000 Surkhandarya and Tashkent Provinces and up to 64 in Namangan Province and as high as 85.2 in Tashkent-city.

In the meantime, it should be acknowledged that reorganization and reduction in the number of beds have not produced the desired outcomes yet. Despite shorter periods spent in inpatient care, the average length of time a bed is occupied increased insignificantly from 294.8 days in 1998 to 304.9 in 2004. Bed occupancy rates in Tashkent-city, the Republic of Karakalpakstan, and Surkhandarya Province were nearly 300 days, reflecting inefficient use of budget appropriations in the in-patient sector.

There is a sub-optimal distribution of hospital beds by health service tier. More than half of the total number of hospital beds is located in provincial centres and Tashkent-city. While 49.8% of the country's hospital beds are in rural areas, more than 60% of the country's population lives in rural areas. Such hospital bed distribution does not contribute to ensuring equal access of the rural population to skilled hospital services and increases the gap between large cities and rural areas in terms of in-patient care indicators. Urban residents are treated in bigger and better equipped hospitals. Rural residents constitute only 20% of the patients in urban hospitals. The majority of the rural population receives treatment in less well-equipped central and district hospitals.

As anywhere else in the world, the concentration of special medical assistance and high-tech equipment in large urban health institutions lowers the access that the rural population has to such assistance and facilities. In the meantime, average annual bed occupancy reached 313.3 to 318.6 days in provincial hospitals, and 299.5-306.7 days in national-level (Republican)

Table 3.8

Inpatient care in Uzbekistan

	Total number of beds (thou)	Per 10,000 persons (beds)	Bed occupancy (days per year)	Average length of bed stay (in days)	Bed turnover
Republic of Uzbekistan	142,9	54,9	304,9	10,6	28,8
Republic of Karakalpakstan	9,3	59,2	281,8	11,8	23,9
Provinces:					
Andijan	14,1	60,2	300,6	10,9	27,6
Bukhara	7,0	46,4	310,7	9,4	33,1
Jizzakh	5,0	47,9	314,9	10,8	29,2
Kashkadarya	12,5	52,6	306,8	10,6	28,9
Navoi	4,2	51,8	329,5	9,6	34,3
Namangan	13,3	64,2	306,3	10,6	28,9
Samarkand	14,9	52,0	309,0	11,1	27,8
Surkhandarya	8,5	44,9	287,9	10,5	27,4
Syrdarya	4,3	64,0	302,1	11,6	26,0
Tashkent	11,0	44,9	312,5	9,5	32,9
Ferghana	13,4	47,2	314,6	10,2	30,8
Khorezm	7,2	50,3	313,3	11,2	28,0
Tashkent	18,2	85,2	297,5	11,1	26,8

Source: State Statistics Committee

hospitals in 2005.

159 central district, 36 district, and 169 rural precinct hospitals where the average number of beds is 294, 102, and 32, respectively, provide in-patient care for rural residents. 80 rural district hospitals were closed/reorganized as part of health care reforms (169 in 2004 compared with 249 in 1998), while the number of beds was reduced by 1,712 or by 24% (5,502 beds in 2004 compared with 7,214 beds in 1998). Restructuring of rural administrative district institutions redistributed the share of patients treated.

While in 1998 13.2% of patients were treated in rural precinct hospitals, 6.2% in district hospitals, and 80.6% in central district hospitals, the share of patients in 2004 treated in central district hospitals increased up to 85%, and increased up to 6.5% in district hospitals, while those treated in rural precinct hospitals decreased by 8.5%. These changes made it possible to improve the quality of health services and cut costs by eliminating the inefficient use of rural hospital beds.

However, the annual average for length of bed occupancy in central district hospitals in 2005 even fell from 317.5 in 1995 to 309.3 days, in district hospitals – from 321.5 to 294.4, explaining the inadequate quality of health services and lodging conditions at these hospitals.

This indicates that it is essential to redirect the restructur-

ing of in-patient services. In order to avoid fragmentation of diagnostic units and auxiliary services, it is essential to give serious consideration to locating all units, including central district hospitals, in one area. It is essential to streamline obstetrical services based on needs, reviewing existing maternity hospitals, and establishing rehabilitation departments.

The existing provincial hospital system should also be reviewed. Due to limited capacity of specialized provincial clinics (endocrinological, oncological, etc.), those clinics have no resuscitation units, their staff is not au courant about general health issues, and doctors are cut off from daily contact with their specialist colleagues. Support services (kitchen, laundry), excess administrative and service staff and drivers need to be maintained separately. The main tier of functions at these institutions – laboratory analysis and functional diagnostics – are weak and vulnerable, so that the first link in the “diagnosis-treatment” chain is not well managed which in turn lowers the quality of specialized medical services in general.

It may be the case that consolidating a number of specialized provincial clinics into a provincial multi-field hospital would be the best way to proceed. That would remove duplication of services, optimize installation of costly laboratory and diagnostic equipment, enhance managerial efficiency, and make better use of budget appropriations. Most important of all, it would

make it possible to significantly improve the quality of medical assistance by putting a well equipped diagnostic center in such clinics.

Health workers

There are 70,900 physicians providing public health services within the Ministry of Health system.

Restructuring of health care institutions between 1995 and 2005 led to a reduction in staffing; the number of physicians decreased by 4,159, while the number of doctors per 10,000 people went down from 33.3 to 26.8. Staffing has since increased from 86.7% to 91.3% from required quantity. In the meantime, health care institutions continue to experience a shortage of experts, primarily physician-lab technicians, psychiatrists, TB specialists, and X-ray technologists. Overall, staffing of lab technician position nationwide stands at 86.7%, X-ray technologists at 82.5%, psychiatrists at 87.5%, TB specialists at 88.9%, with indicators in Surkhandarya, Syrdarya, Tashkent province and Tashkent-city even lower. The situation that has come about points up flaws in staff planning, training, and distribution. Only 895 (34.8%) of 2,571 medical university graduates took jobs in 2005 due to their unwillingness to fill vacancies at health institutions. This would indicate there is an exodus of specialists

with extensive health care work experience into other sectors.

Existing opportunities for postgraduate training are not adequately used. Although this issue has come under closer scrutiny in recent years, only 19.7% of the total number of doctors have received postgraduate training, 16.4% of the doctors in Djizzakh Province have, 16.4%, in Ferghana Province have, 15.5%, in Surkhandarya have, and 15.9% in the Republic of Karakalpakstan have. 36,500 or 51.4% of all doctors are in qualification-based categories. Of those 17.8% are in the highest category, 30.4% are in Category I, and 3% in Category II. In Samarkand province 36.9% of all doctors have earned a category, in Ferghana 48.3% have, and in the Republic of Karakalpakstan 37,1% have.

This situation requires introducing effective incentives for continuing education and staff development. In addition to switching to differential salaries for specialists based on their work performance, it is essential to introduce a system of periodic certification for medical practice by issuing certificates. It is likely that may be an effective means of motivating specialists to continuously upgrade their knowledge and professional skills.

Table 3.9

Number of doctors and mid-level health care staff (as of January 2005)

	Doctors				Mid level health care staff			
	Grand total	Per 10,000 population			Grand total	Per 10,000 population		
		Total	Urban*	Rural*		Total	Urban*	Rural*
Republic of Uzbekistan	70958	27,3	40,9	21,2	257113	98,8	90,8	105,5
Republic of Karakalpakstan	3765	24,0	20,5	30,4	15540	99,0	71,4	133,0
Provinces:								
Andijan	6010	25,7	45,5	18,4	22053	94,1	88,6	99,9
Bukhara	4353	28,9	44,9	22,8	17636	117,0	87,3	129,3
Jizzakh	1974	18,9	29,4	16,9	9264	88,8	94,3	87,3
Kashkadarya	5219	21,9	27,1	22,4	23559	99,0	73,3	108,9
Navoi	1540	19,0	18,0	21,0	6822	84,2	34,9	123,8
Namangan	4832	23,3	23,9	24,9	20581	99,3	60,6	122,8
Samarkand	8203	28,6	54,8	20,4	23780	82,9	90,1	80,6
Surkhandarya	3927	20,7	27,4	21,3	17556	92,6	71,1	96,9
Syrdarya	1496	22,3	38,7	16,3	7622	113,4	139,7	103,1
Tashkent	4966	20,3	20,9	23,3	22971	93,7	78,4	108,8
Ferghana	6241	22,0	41,0	15,9	31494	110,9	127,7	108,7
Khorezm	3888	27,1	37,0	25,2	13337	93,1	84,0	99,6
Tashkent	8126	38,0			16808	78,7		
National institutions	6418				8090			

Note: * - estimated per 10,000 residents.

The primary health care reforms process has impacted human resources policies. A general practitioner (GP) is now defined as a patient's main specialist when initial contact is made with the health care system. Between 1998 and the present, more than 7,000 GPs were trained at universities and by targeted cycles of the Tashkent Institute for Training Physicians. GPs are generally assigned to the rural health care system, primarily to rural doctors' posts. By the end of 2005, there were 4,164 GPs working at such posts. Overall, 4,490 GP staff positions have been created, of which 92.3% are filled.

Now that GPs are relatively widely available in the rural areas, shortages of doctors in other specific areas are starting to emerge. Even traditionally popular medical specialties are experiencing shortages of doctors. The imbalance between urban and rural medical facilities is equally significant. While 64% of the population lives in rural areas, only 47.7% of doctors work there. The number of doctors per 10,000 persons in a rural area is half as great as in the cities (20.4 and 39.2, respectively). These differences are most evident in the provinces of Ferghana (15.9 and 41.0), Syrdarya (16.3 and 38.7), and Djizzakh (16.2 and 29.4).

Total mid-level health care staff (nurses) numbered

261,901 (or 99.5 per 10,000 residents) at the end of 2005. That represents an increase of 12,330 since 1995, while the indicator per 10,000 persons fell from 109.1 to 99.5, since the population grew at a faster rate than the number of health workers. The ratio of the number of doctors to the number of mid-level health workers increased from 1:3.3 to 1:3.7.

According to a sociological survey's findings, mid-level health workers are not content with their working conditions because of the lack of equipment and supplies, lack of proper recognition for their work, and limited opportunities to improve their knowledge. According to statistical reports, in any one year only 14% of mid-level health workers have a chance to improve their skills. This is clearly not enough to give all specialists an opportunity to update their knowledge at least once in five years.

Box 3.4

Recommendations for further health care system reforms:

Health care facility functions

- Give outpatient facilities and clinics a leading role and make universal introduction of GP practices a priority;
- Manage departments of central district hospitals and central municipal hospitals so that they can provide the people with integrated and quality medical assistance;
- Develop measures to ensure continuity for scheduled surgery and emergency medical assistance services at central district hospitals and central municipal hospitals, close inefficient (ophthalmologic, otolaryngological, urology, traumatology, etc.) departments of CDH and CMH. If a need for those departments exists, establish them upon appropriate accreditation and with special assistance from the National Commission established for that purpose;
- In order to streamline specialized medical assistance, avoid duplication of services, optimize distribution of laboratory and costly equipment, enhance the efficiency of its use, close down unproductive specialized facilities unable to offer quality health services for lack of high-tech medical equipment and staff; and concentrate the latest medical technologies at the major health care institutions at higher levels;
- Revive inter-district diagnostic centers provided with essential equipment and supplies to bring them closer to the communities.

Human resources policies:

- Balance the ratio of GPs and specialists in specific areas, identify projected demand for GPs and specialists, implement human resources training mechanism for employment at primary health care level;
- Improve system of postgraduate training, introduce periodic medical practice certification;
- Improve nursing system, enhance prestige of nurses and increase their responsibilities for quality of diagnostic and treatment procedures;
- Gradually eliminate the imbalance between urban and rural areas in the availability (urban) or unavailability (rural) of specialists.

CHAPTER 4.

THE HEALTH CARE OUTLOOK IN UZBEKISTAN

4.1 Health Care Reform

Why were reforms necessary?

By the early 1990s, Uzbekistan's health care system was quite developed. It was widely accessible to all categories of people, had a wide network of out-patient facilities and hospitals, offered prevention options including vaccination of all pre-school and school-age children, and boasted pre-service and in-service staff training systems.

While some its public health indicators were close to those of other countries of the former USSR, some others were lower.

Table 4.1
Selected public health status indicators, 1990

Country	Life expectancy (in years)
Uzbekistan	69,3
Azerbaijan	71,0
Armenia	70,4
Belarus	71,1
Kazakhstan	68,6
Kyrgyzstan	68,5
Moldova	68,5
Russia	69,2
Tajikistan	69,4
Turkmenistan	66,4
Ukraine	70,5
Georgia	72,6
Lithuania	71,5
Latvia	69,5
Estonia	70,0
United Kingdom	75
U.S.	75
Japan	79

Source: Statistical compilation of 1992 - "World in Figures". Statistical Committee of the Commonwealth of Independent States.

Maternal and child mortality indicators were unacceptably high from the perspective of developed countries.

The quality of health care services was low, particularly in rural areas. Health facilities had outdated

equipment inadequate for high quality diagnostics and treatment. Many high-tech interventions were not possible, even at specialized clinics, due to the lack of equipment and adequately qualified personnel.

The health care system proved to be completely unprepared for Uzbekistan's transition to a market economy for the following reasons.

First, health care was totally dependent on the Government budget for financing, making it extremely difficult to sustain the health care system during the periods of economic decline Uzbekistan experienced from the late 1980s to the mid- 1990s. As there were no other legitimate sources of funding for the system, even maintaining existing standards, let alone improving them was impossible.

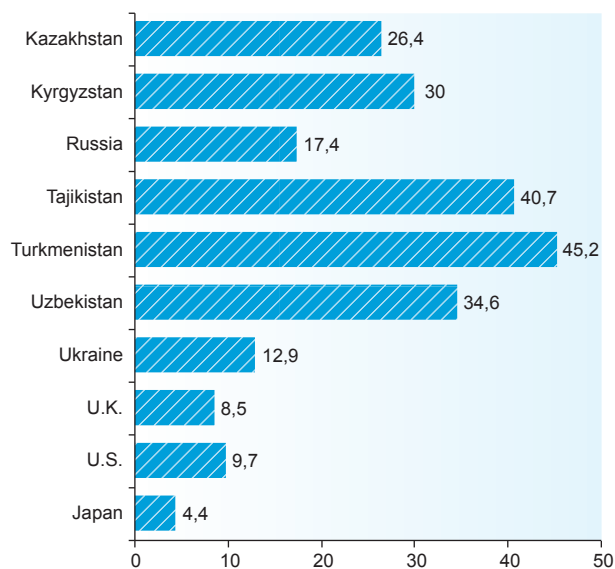
Secondly, the system used the funds allocated to it inefficiently by dispers them in a multi-tiered system that did not encourage prioritizing areas of health care and that focused on costly inpatient treatment instead of focusing on prevention and outpatient treatment.

Thirdly, primary health care was particularly neglected, particularly in rural areas where public health services were often provided by medical attendants, instead of by doctors, in rural clinics that were almost unequipped except for rudimentary medical equipment. Health care standards in urban and rural areas differed significantly to the disadvantage of rural residents.

Fourthly, given the very high birth rate, maternal and infant health care efforts were concentrated on obstetrics and treatment of illness instead of on maternal care. As a result of frequent pregnancies, the health status of women of reproductive age was poor, and maternal mortality, high by international standards, was among the highest in the USSR. Mothers giving birth to many children, rarely spaced as much as even a year apart, gave birth to premature, weak, physically immature babies who were prone to high infant mortality or who later on encountered high morbidity during childhood, adolescence and into and through adulthood.

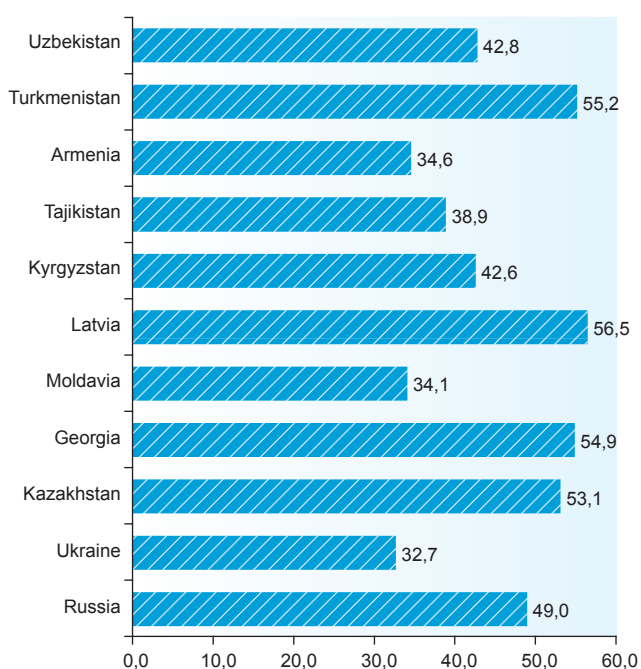
Fifthly, the health care system focused on treatment rather than on prevention and advocacy of healthy lifestyles. The concept of taking care of one's own health was not cultivated among the public. Inexpensive and widely accessible medications were overused.

Figure 4.1
Infant mortality (number of children deceased before age 1 per 1,000 live births) in 1990



Source: Statistical compilation of 1992 - "World in Figures". Statistical Committee of the Commonwealth of Independent States.

Figure 4.2
Maternal mortality (number of maternal deaths in pregnancy, pre-natal and post-natal periods per 100,000 live births) in 1989



The health care system, given its focus and weaknesses, was incapable of meeting proper public health standards. Therefore, the Government decided to reform it radically.

It must be kept in mind that for the first half of the 20th century this organizational pattern made the most sense for Uzbekistan where the level of personal hygiene literacy was low, social and community conditions were poor, the transportation system was poorly developed, and there was a lack of trained health care providers in various areas. Primary health care was provided at out-patient facilities and medical attendant (feldsher) stations which determined whether patients had somatic or infectious diseases, advocated hygiene skills and performed sanitation inspections. Hospitals had to support not only the needed level of specialized health care but also provide patients (especially those brought in from distant rural areas) with a long hospital stay for basically the entire period of treatment until recovery was complete. While recalling the shortcomings of the Soviet health care system, it should not be forgotten that the system was founded by N. A. Semashko and that several generations of talented managers of the Soviet school of health care management put the system into practice establishing major trends that set the standard in Soviet and international health care for many years thereafter. In fact, many of them are still valid.

Uzbekistan's health care reforms are being implemented within the framework of the State Programme for Reform of the Health Care System as well as annual targets of various social programmes. In the last decade alone, the State Programme for Rural Infrastructure Development, the Year of Mother and Child, the Year of a Healthy Generation and the Year of Health Care Development have all focused on health. President Islam Karimov declared 2006 the Year of Charity and Health Workers.

The main thrust of health care reforms has taken the following forms:

- A new conceptual and practical approach to maternity and childhood emphasizing favorable environment for childbirth and for raising a healthy generation. These changes are focused not only on the short-term low maternal and child mortality indicators but also, most importantly, on producing healthy future generations and extending life expectancy. This is the most reasonable approach from the human development perspective;
- Fundamentally new approaches to building the health care system and developing its infrastructure. A major reform objective is to create equal access to primary health care in urban and rural areas;
- Rejection of old stereotypes and changing the approach to the health care financing system, significantly expanding the number of funding sources for the sector by developing private health care to make up for state budget funding deficits and to improve the quality of health care services, etc.

Box 4.1

2006 - the Year of Charity and Health Workers

Goals	<p>Implements integrated goal- and target-oriented functions that:</p> <ul style="list-style-type: none"> • Enhance the role and significance of charity – as moral values among the people; • Widely involve individuals, organizations, and companies, increasing their contribution to the financial and moral support of socially vulnerable groups of the population; • Enhance the prestige of the health worker profession and improve its working conditions;
Major objectives	<ul style="list-style-type: none"> • Implements activities for targeted financial and moral support for groups in need, primarily the disabled, elderly who live alone, poor families and orphans; improves rooming accommodations at boarding houses for the elderly and disabled, as well as at “Mehribonlik” homes and boarding schools for children with developmental problems; • Creates the legislative and regulatory framework promoting the guarantees and incentives for and public recognition of charity work, cultivates higher humanitarian values such as mercy, generosity, and magnanimity in the public consciousness, particularly among the youth. • Enhances the public prestige of health professionals, improves the system of financial and moral incentives for highly skilled doctors, experienced nurses, and hard working hospital attendants, and creates decent working and living conditions; and • Improves, and makes better use of, the health care system infrastructure, conducts fund raising among philanthropists and sponsors, and increases the access of all population groups to quality health care services.
Programme Composition	<p>Section I. Measures to provide specific financial assistance and moral support for socially vulnerable groups throughout Uzbekistan’s regions, districts, and neighborhoods:</p> <ol style="list-style-type: none"> 1. Financial and moral support for poor families; 2. Improvement of conditions at special welfare institutions and enhancement of infrastructure of educational institutions; and 3. Medical treatment of the poor, children and the disabled, and programmes to improve their health. <p>Section II. Creation of legislative and regulatory framework promoting solid incentives for and public recognition of charity work.</p> <p>Section III. Enhancement of the public prestige of health professionals, improvement of the system of work incentives for them.</p> <p>Section IV. Further development of the infrastructure of health care institutions:</p> <ol style="list-style-type: none"> 1. <i>Construction, repair and maintenance, and major renovation of health care facilities;</i> 2. <i>Provision of modern health care equipment.</i>

- Optimizing the sector’s funding system by allocating budget funds chiefly for primary care, outpatient and clinic treatment, and by reducing the emphasis on the costly in-patient system;
- Establishment of an innovative system of emergency medical assistance on all administrative and territorial levels;
- Improvement of the health care management system by reducing the number of tiers;
- Improvement of the health care legislative framework.

Implementation of the second stage of health care system reforms started in 2003 envisioning gradual creation of high-tech specialized medical centers to provide quality health care services. To date, four national specialized centers for surgery, cardiology, urology, and microsurgery, respectively, have been established in Uzbekistan.

Uzbekistan’s current health care system is unique in that it retains features of the Soviet health care system combined with elements typical of modern health care reforms.

In building the new health care system, the Government of Uzbekistan has been guided by the following principles and precepts:

- For human development purposes, health care must be accessible to all population groups. There must be unlimited access to primary health care which must be free-of-charge, even in a market economy;
- Residence in rural areas must not negatively impact human capacity development. The previous system of rural primary health care services provided by medical attendants (feldshers) resulted in discrimination against the rural population, compared with the urban population. Therefore, improvement of the quality of rural health care services is the centerpiece of the new health care system. Under the new system, new health care institutions – rural doctors’ posts -- are being created, at which medical assistance provided by medical attendants is being replaced by medical assistance provided by qualified health care staff with medical university degrees.

- Medical specialization at the primary care level squanders budget appropriations while failing to provide systematic and comprehensive patient care that takes into account that each individual is unique. Therefore, the new primary health care system focuses on providing efficient and effective medical assistance amenable to integrated case management by general practitioners (GP) who provide the bulk of primary medical assistance.
- Patients are the most vulnerable during the very first minutes of a health emergency. Accessible, high quality, free-of-charge emergency medical treatment is therefore absolutely indispensable. For this reason, a special network of well-equipped facilities providing emergency inpatient medical assistance was established nationwide from central to district levels.
- Budget funding of health care in rural regions must provide well managed health care services on a per capita basis, with the bulk of the funding allocated for preventive medicine measures and out-patient treatment, not for costly inpatient hospital treatment;
- The medical treatment system will be improved if specialized clinics are operated in tandem with an effective primary health care tier and quality medical emergency service. To do so requires establishment of specialized clinics for specific health problems, equipped with high-tech equipment and staffed by highly qualified specialists.

Primary health care

Out-patient facilities and clinics. A system of 5,536 out-patient facilities and clinics consisting of 184 independent clinics for adults and 33 for children, 2,834 rural and 51 municipal doctor's posts, 388 rural out-patient posts, 907 consolidated clinics, and 169 other facilities provide Uzbekistan's population with primary medical care and sanitation services. Obstetrical and medical posts have been retained in some remote rural settlements where the number of families is too small to make an Rural doctors' posts (RDP) feasible. There were 4,495 FAPs in 2004, compared with 2,456 in 1998.

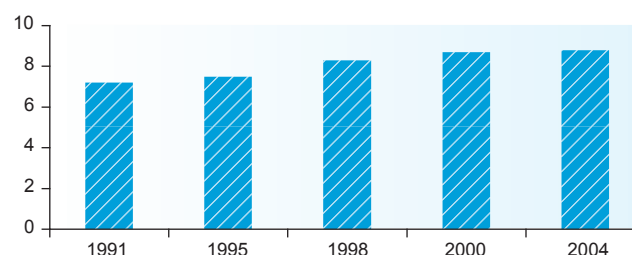
Out-patient facilities and clinics reported a total of 229,673 doctor visits (8.8 visits per capita per annum) in 2004 - an increase of 29,409 (14.7%) visits, compared with 1998.

Flows of patients seeking primary medical care have changed thanks to the establishment of **RDPs** in the last 10 years.

In 1995, national and provincial facilities accounted for 2.7% of all visits, while municipal and district terri-

Figure 4.3

Visits to outpatient institutions and polyclinics (per capita per annum)



torial clinics accounted for 71.2%, and specialized out-patient facilities accounted for 26.1%. In 2005, flow of visits to territorial out-patient facilities increased significantly to 82.3%, while visits to national and regional institutions as well as specialized facilities fell to 1.2% and 16.5%, respectively.

These changes have given the population broader access to health services provided locally where they live, thereby eliminating the time formerly spent traveling to reach regional or national health care facilities and the expense of doing so, while the time saved makes treatment more timely which speeds recovery.

The types and frequency of visits to specialists are changing, reflecting the growing importance of the role of regional or national general practitioners.

Table 4.2

Visits to at outpatient institutions and polyclinics by type of specialist

Specialists	1995	2005
Precinct doctors (pediatricians, therapists)	72,2 %	42,2 %
Obstetricians-gynecologists	17,4 %	19,4 %
Surgeons	9,4 %	8,7 %
GPs	1,0 %	29,7 %

The share of visits to specialists by specific fields and major specialties has changed, too. Whereas 48.2% of all patients used to be referred to specialists, the percentage of referrals dropped to 42.2% in 2005, again reflecting less time and money spent on travel with concomitant gains in speed of treatment and recovery.

Yet issues concerning the quality of primary health care, particularly in rural areas, are far from completely resolved - primarily because of shortages of modern treatment and diagnostic equipment at RDPs. Furthermore, to date the professional performance of rural GPs does not always meet professional standards.

Due to these circumstances, patients often bypass

rural doctor's posts, preferring to contact central district hospital clinics, and as a result, almost 54% of the visits rural residents made for primary health care were at central district clinics and 46% at **RDPs**.

Box 4.2

Measures to enhance health care

- Expand access to health care services
- Expand access to quality primary health care services
- Expand access to quality emergency medical treatment
- Expand access to quality specialized medical treatment
- Improve preventive medicine
- Advocate leading a healthy lifestyle
- Improve vaccination programmes
- Improve sanitation and epidemiological conditions

General practitioners must acquire a special status by becoming key players beyond hospital walls. International health care experience proves that as GPs assume greater responsibilities and as their role grows in importance, the quality of medical care improves and substantial financial savings are realized. Therefore, it is crucial that GPs acquire proper qualifications and they be provided with the proper equipment, in-service training and working conditions.

Disease prevention – strategic efforts to improve public health

In the broad sense of the word, preventive health care (PHC) is a system of medical and non-medical measures aimed at preventing or reducing the risk of disease, and preventing or slowing its progress. Protecting and improving the public's health should be the goal not only of health care workers but also of society as a whole. This concept is backed up by a number of legislative acts: the Constitution of the Republic of Uzbekistan, the Law on Public Health Care and the Law on State Sanitation Oversight control.

The set of preventive measures the health care system implements is classified as medical PHC, which is the primary mission of the Sanitation-Epidemiology Service.

The Sanitation-Epidemiology Service of Uzbekistan has 216 state sanitation and epidemiological centers, 192 disinfection stations, and three plague stations employing a total of 3,992 doctors and 10,494 mid-level medical staff. There are 3 hygiene and epidemiological research centers: the Epidemiology, Microbiology and Infectious Diseases Research Institute (EMIDRI), the Sanitary Hygiene and Preventive Health Care Research Institute (SHPHCRI), and the Medical Parasitology Research Institute (MPRI).

These institutes are responsible for implementation of measures to stabilize the sanitary-epidemiological situation in the country, and for performing inspections of the ongoing status of enterprises and companies, schools, pre-school institutions, public catering establishments, and living quarters or preventive inspections of those under construction. Sources of the water supply and quality of drinking water, foodstuffs, and household items also come under their oversight.

More and more migration, and increased threats from dangerous infectious diseases are consequences of greater international interaction. Sanitation and epidemiological facilities and bodies are responsible for preventing dangerous infectious diseases from penetrating Uzbekistan's borders.

PHC is an integral part of the practice of any medical practitioner. It is an integral part of treatment. Primary health care institutions are the key and central tier in PHC activities. Precinct doctors, general practitioners, and nurses are in regular and direct contact with the population. They know the surroundings and lifestyle of their patients and their families better than specialists do. Hence they are able to engage in PHC and hygiene instruction in a more targeted manner. At the same time, these health workers link the population and the Sanitation-Epidemiology Service as well and link the public's that promote a healthy lifestyle.

The Sanitation-Epidemiology Service

Primary level prevention efforts take various forms. They include individual and group discussions, lectures, as well as establishment of maternity schools, healthy child offices, and lecture halls for parents. The main emphasis is on early childhood, including vaccination campaigns, monitoring pregnancy, prevention of undesired pregnancies and other activities to promote reproductive health.

A major method of primary level prevention is referrals to dispensaries, which integrate prevention and treatment using a mix of various diagnostic, treatment, prevention and social measures. These include active systematic observation of health status, identification of early forms of disease, referrals of patients for treatment in time to prevent the onset or development of diseases, even going so far as having patients change their place of work.

Thanks to PHC alone, child morbidity from diarrhea, other acute diseases, and infant mortality nationwide have declined sharply.

The percentage of children breastfed up to the age of 6 months hovers around 94-96%. Coverage of infants under 1 year old with preventive vaccinations has reached 98%, and as a result, no cases of poliomyeli-

tis have been registered in the country in the past six years. WHO issued Uzbekistan a certificate in 2002 proclaiming Uzbekistan a “poliomyelitis free region.” Diphtheria has not been registered for the last two years.

Incidence of viral hepatitis and bacterial dysentery has been reduced.

Targeted PHC activities among reproductive age women have made it possible to reduce maternal mortality almost by half, increase birth spacing by as much as two years or more, minimize deliveries by women under the age of 20 and above 35, and change family size choices in an attempt to bring down the percentage of couples having very large numbers of children.

Yet as of now only limited numbers of children, teenagers, reproductive age women, and those working in hazardous conditions and patients, which make up 10% of population, have access to dispensaries. Such limited access is clearly unacceptable, especially since PHC is so highly effective.

It is essential to restore previous full government funding for all required minimum PHC programmes for children from school-age through graduation. PHC programmes for pre-school age children after preventive vaccinations given in maternity hospitals should be conducted either at pre-school institutions or at the place of residence with primary healthcare resources: **RDPs**, district and municipal clinics. PHC should include all essential preventive vaccinations and precinct doctor home visits for babies less than 6 months old.

Pre-school children should be covered by preventive examinations at their place of study. Prevention should include not only vaccinations for traditional infectious childhood diseases but also for newly emerging infectious epidemics such as hepatitis, and acute respiratory viral infections. Furthermore, PHC for that age group should include prevention of thyroid gland diseases (iodine therapy) as well as anti-tuberculosis measures.

To develop PHC, it is essential to separate mandatory PHC financed by the government from commercial PHC fully or partially funded by private resources.

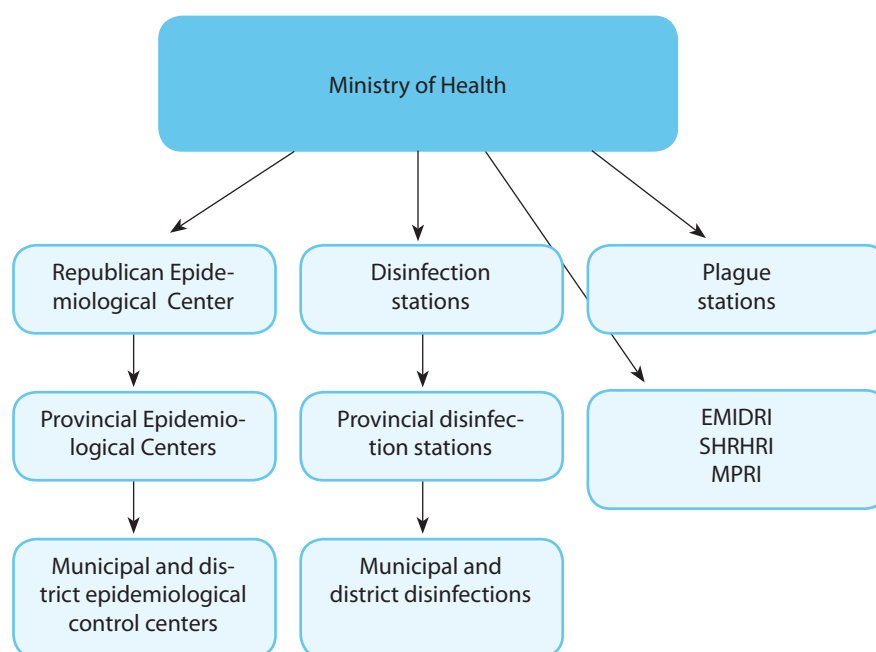
Mandatory PHC should include all essential measures against socially dangerous infectious diseases (e.g.

tuberculosis) as well as measures against large-scale epidemics and pandemics.

Furthermore, PHC measures should also encompass national and international programmes for food supplementation to supply missing nutrients essential for public health.

Development of commercial PHC may be based on provincial and district offices of specialized medical PHC centers, which may include diagnostic centers as well as therapeutic fitness centers.

Both the government and the public should understand that resources invested in PHC realize tremendous savings of resources which can then be allocated to treat diseases which were not prevented or not detected in time to be prevented.



Emergency Medical Services

One of the priorities of the reforms was the establishment of the system of public emergency medical services (EMS) unique to CIS countries.

The EMS is run by the Republican Emergency Medical Assistance Research Center (REMARC). Branches of REMARC, established in provincial centers and the city of Nukus, operate in 172 districts and cities as emergency medical assistance units at central district and municipal hospitals. The EMS also includes the “03” emergency ambulance service and rescue aviation.

In addition, 182 emergency medical service brigades (EMSB) were established at the district and city levels to provide immediate medical assistance at the epicenter of a disaster and along its borders, managing and

conducting medical classification of, and providing evacuation support for, disaster victims.

Three special medical brigades are on round-the-clock alert at REMARC and its branches (39 in total) to provide quality specialized emergency medical services for survivors at disaster sites, major accidents, en masse and group sicknesses and poisonings, radiation and chemical pollution as well as to provide management, counseling, and coordination support for medical units working on-site.

As of December 2004, the National Emergency Medical Assistance Service had 8,245 beds, including those under REMARC and its 3,650 branches, and 4,595 emergency assistance units.

Annually more than 13% of the 6.3 million patients hospitalized at inpatient facilities for emergency aid receive emergency medical service at emergency medical assistance units.

In order to ensure that the quality and standards of EMS services are adequate, the Government has equipped EMS units with modern diagnostic and treatment equipment and tools. Overall, there are 687 units with high-tech equipment at REMARC. Provincial branches and sub-branches are gradually being equipped. However, the process is not yet completed. A mobile unit for high-tech equipment maintenance and servicing has been set up under REMARC.

The unique training system for the Emergency Medical Assistance Service was established under REMARC and actively involves the Tashkent Medical Academy, Tashkent Institute for Medical Training and various medical universities.

Specialized Medical Services

In conformity with the Law of the Republic of Uzbekistan On Protection of Citizens' Health (issued August 29, 1996, clause 31), specialized health care services shall be provided to citizens afflicted with diseases requiring specific methods of prevention, diagnosis, and treatment and using sophisticated medical technologies applied by physicians licensed to provide specific types of health care services in medical treatment and prevention facilities. Changes in the status of the health of the population and the growing number of people in need of specialized skilled health care services necessitate that health care advancements, especially those underpinning the latest trends specialized health care services, be adopted and put into practice.

How specialized physician offices, units and independent facilities are set up depends directly upon the flow into PHC facilities of patients who have certain diseases as well as upon the scope and type of health care services to be provided. The types, scope

and standards of specialized health care services are defined in terms of vital needs of the population and actual prospects of meeting those needs. The system of large multi-field (specializations) hospitals, out-patient clinics in the country's administrative centres - districts, towns, provinces, and Tashkent-city - constitute the core of the specialized health care services. Major types of specialized health care services are concentrated in these institutions, except for those that are provided by specialized clinics, centres or hospitals.

As of early 2006, the network of specialized physicians' offices in out-patient clinics provided specialized health care services in the following fields of medicine: cardiology (370 offices), pulmonology (134), gastroenterology (412), endocrinology (412), otorhinolaryngology (599), ophthalmology (563), allergy (67), oncology (283), dermato-venereology (299), psychiatry (262), neurology (580), traumatology and orthopaedics (445), rheumatology (254), and urology (314). Of the total of 135,900 hospital beds available, 52.7% are used for specialized health care services.

Out-patient departments of central district hospitals provide 16-18 types of specialized health care services, while in-patient units offer, as a rule, mainly specialized therapeutic, surgical, paediatric, obstetrical-gynaecological, and infectious disease services. Units rendering specialized services (e.g. cardiologic, therapeutic, haematological, gastroenterological, neurological, etc.) are organized in large districts, with populations between 250,000 and 300,000.

It is also the practice for inter-district units to specialize in ophthalmology, otorhinolaryngology, traumatology, dermato-venereology, burn trauma units, neurology, etc.

Taking into account morbidity rates and demand for types of specialized health care services, 16 scientific research institutes and 8 centres specializing in different fields of medicine were set up. Recently, specialized treatment and consultative services have been organised in consultative and diagnostic centres.

An important part is played in the specialized health services system by the network of hospitals specializing in such fields of medicine as tuberculosis, drug addiction, mental and neurological diseases, oncology, endocrine diseases, and cardiology.

In-patient specialized services are provided by, in addition to hospital in-patient departments, specialized units of multi-field (specialisations) hospitals, single-field hospitals, clinics of scientific research institutes, and training hospitals of medical institutes.

Rehabilitation services are provided in sanatoria most of which specialize in an individual disease.

In health care services administration, special atten-

tion is paid to emergency assistance services which are provided by specialized teams of physicians (cardiologic, neurological, traumatologic, psychiatric, etc.).

Thus, the main principle in administering specialized health care services is that treatment be administered in stages. Each facility has its own functions, rank and is to accomplish a specific task within a single system of treatment and prevention services. It should be stressed that recently special attention has been paid to implementation of a doctrine of integrated patient management, requiring specialized services, in accordance with the principles of evidence-based medicine.

A new trend in specialized health care services development is to set up modern high-tech clinics and centres meeting international standards. This development was set forth in the Decree of the Republic of Uzbekistan On Measures to Further Reform the Health Care System which represents a new step in improving specialized health care services. In accordance with the Decree, the following specialized centres were set up:

- a urological centre;
- a surgical centre;
- a cardiological centre; and
- an ophthalmic-microsurgery centre.

The major objectives of these centres are:

- to introduce modern methods of diagnosis and therapy to provide the quality specialized care services according to each centre's profile;
- to use marketing methods to attract financial, material and technical resources;
- to continue to upgrade professional skills of the centre's medical personnel;
- to conduct research.

Considering how Uzbekistan's population is distributed and the heterogeneous character of the transportation network between settlements, the functional structure that is optimal for specialized health care services is medical rather than administrative or territorial. Put differently, a provincial centre providing provincial residents some specialized services is to provide specific health care services to patients from areas surrounding that province.

4.2 Roles of the public and private sectors in health care

Public-private partnership in the health sector: getting the right mix

For a number of reasons, governments often finance and provide basic social services – primary health care, primary education, water and sanitation. One reason they do is that because such services are public goods, their market prices alone would not capture their intrinsic value and social benefits. Effective delivery of primary health care improves the welfare of the individual citizen, a most valuable objective in itself, as well as contributing to the economy by raising worker productivity.

A second reason for public financing is to ensure that basic social services are available equitably. Poor people usually lack these services, and if they have to pay for them they may not use them – making it difficult to escape poverty. In addition, the state often plays a dominant role in the provision of these services. Provision by many suppliers (public or private) can result in duplication and higher costs. Moreover, access to basic social services is a fundamental human right – enshrined in the UN Covenant on Economic, Social and Cultural Rights – and governments have an obligation to ensure that these services are provided to their people. Government commitments to the UN Millennium Declaration and Millennium Development Goals reflect this obligation.

But public provision of social services is not always the best solution when institutions are weak and accountability for the use of public resources is low – often the case in developing countries. In the first half of the 19th century private providers dominated health, education and utility services in rich countries. But these services were limited. In the second half of the century, public financing and provision became dominant. Indeed, it was only in the last quarter of the 19th and first half of the 20th centuries when governments intervened that these services became universal in Canada, Western Europe and the United States.

In poor countries, private health providers and private schools coexisted with a growing public sector in the first few decades after the Second World War. But in the 1980s, and especially the 1990s, private provision began to increase rapidly. As money losing state-owned enterprises were privatized in productive sectors – in both industry and services – the same trend was encouraged in social services.

The experiences of rich countries suggest that the sequence for social services should be comprehensive

provision by the state early on, followed by more targeted interventions and then by public-private partnerships to serve different markets – depending on the nature of services in different sectors.

Why has the private sector's role increased in poor countries? In developing countries, the private sector's growing role in health and hospital services has been driven by three factors: lack of government resources, low-quality public provision and pressure to liberalize the economy.

Lack of government resources. Strapped for cash – whether from domestic resources or foreign aid – many governments of poor countries cannot provide social services effectively or fund large investments in infrastructure. Privatization is often pursued with a view towards obtaining revenue, but the biggest returns to government come from eliminating subsidies to money-losing public enterprises.

In some cases, such as household water and sanitation (and irrigation water and energy), insufficient government funds have been compounded by distorted tariff structures. In some cases, there are price increases or prices are introduced for what used to be free-of-charge services. Under state ownership, tariffs are often too low to recoup costs, and user failure to pay tariffs are often overlooked. This approach essentially subsidizes rich people—while poor people suffer from lack of access. Moreover, as urban populations increase, fiscally strapped local authorities cannot expand services to cover them. As a result services decline in quantity and quality in middle-class neighborhoods—and tend to disappear altogether from poor neighborhoods.

Low-quality public services.

A weak record of public provision is linked in many countries to a lack of resources. Stories abound of governments failing to provide their citizens, especially poor citizens, with basic social services or with services of good quality. Poorly paid public sector doctors often supplement their incomes by selling medications intended for free distribution. As a result, poor (and non-poor) people are forced to use private providers—because they are more accessible and often dispense drugs as part of their consultations (unlike government facilities, where drugs may not be available).

Pressure to liberalize the economy. The third push for private provision has come from donor policies advocating economic liberalization and free markets to advance growth and development. Social services are frontier issues in the move to expand the private sector's role. In the 1990s, many donors supported extending private provision and financing to social services, especially urban water supply. The World

Trade Organization's General Agreement on Trade in Services also encourages private sector entry into social services.

Global experience in public-private sector role in health. Many developing countries—in Latin America, South Asia and South-East Asia—have substantial, thriving private health sectors. In addition, a large portion of health spending is private in all regions, with more than half of basic health services provided by private providers in low-income countries. In Asia and Latin America, a significant share of hospitals and health facilities is privately owned, though preventive measures are largely the responsibility of the public sector.

More than any other developing region, Latin America has experienced a huge shift towards private care since opening up the management of its health sector to international companies in the 1990s. Several multinational corporations (Aetna, CIGNA, Prudential, American Insurance Group—all US-based) are providing health insurance and services in the region. And they intend to assume administrative responsibilities for public health institutions and to secure access to social security funds for medical care. These companies invest by:

- Purchasing established companies that sell indemnity insurance or prepaid health plans.
- Associating with other companies in joint ventures.
- Agreeing to manage social security and public health institutions.

Impact of managed care. All citizens should have access to basic health services. And private provision can help meet different needs. But is equity ignored in the process?

Latin America has long relied on public social security funds to provide health services. But in the 1990s the management of many funds was offered to foreign health insurance firms. As a result, more funding is used to cover higher administrative costs and returns to investors, reducing access for vulnerable groups and spending on clinical services. In Chile in the late 1990s, about a quarter of patients under private managed care opted for care from public clinics, citing as their main reason the high co-payments required under managed care.

In Argentina, public hospitals that have not converted to managed care face an influx of patients covered by privatized social security funds. These patients have had to resort to public hospitals because they cannot afford their co-payments or because private practitioners have refused to see them (due to non-payment by the social security funds).

Argentina and Brazil's public hospitals now require reimbursements from social security funds and from private insurance, as well as co-payments. To receive free care at public institutions, poor patients must undergo a lengthy means testing – with rejection rates averaging 30–40% in some hospitals. And because managed care organizations attract healthier patients, sicker patients are being shifted to the public sector. This two-tier system undercuts the pooling of health risks and undermines cross-subsidies between healthier and more vulnerable groups.

Appropriateness of health care and regulation. The supposed benefits of privatizing social services are elusive, with inconclusive evidence on efficiency and quality standards in the private versus the public sector. Meanwhile, examples of market failures in private services abound.

Clinical services and drugs are essentially private goods, and there is much evidence of failures in markets for them. Limited regulatory capacity compounds the problem. For example, in many developing countries over-treatment is a major problem in private health care. In Brazil, caesarean sections are more common among private patients because doctors are paid more for operations than for normal births. In Mumbai, India, private providers engage in unnecessary referrals and tests—with referring providers getting a cut of referred providers' fees. By contrast, even though most Canadian and US and many European physicians are private, strong professional regulation ensures that there is no crisis of over-treatment.

In developing countries, unregulated private pharmacists also over-treat illnesses or over-prescribe expensive drugs. Such inappropriate use of medicines leads to dangerous treatment practices, higher health care costs and growing drug resistance. Drugs account for 30–50% of health care spending in poor countries, compared with 15% in rich. People who cannot afford professional services must go to pharmacies, which often do not follow prescribing regulations— especially in China, South Asia and parts of Africa. In India more than half of out-of pocket health spending and nearly three-quarters of inpatient spending is for medicines and consultation fees.

Costs. In many developing countries, costs are rising and use of technology is spreading in the private health care sector. Thailand's private health sector has as much or more of some high-technology equipment as the private sectors in most European countries, even though Thailand's per capita income is much lower and its disease burden differ greatly from Europe's.

In China, a shift in focus from preventive to treatment services has significantly increased drug sales since economic reforms began. Foreigners have invested in

about 1,500 drug manufacturing ventures across the country. With limited access to professional services and aggressive drug production in an unregulated market, the result is irrational drug use—particularly among poor people. In 1993 drugs accounted for 52% of China's health spending, compared with 15–40% in most developing countries. In some rural areas Chinese farmers spend two to five times the average daily per capita income on a typical prescription. Apart from contributing to unnecessarily high medical costs, excessive and inappropriate prescribing of drugs in poor rural areas exposes patients to the risk of ineffective treatment and adverse side effects.

As noted, in Latin America, managed care organizations have taken over the administration of public health institutions—diverting funds from clinical services to cover higher administrative costs. To attract patients with private insurance and social security plans, public hospitals in Buenos Aires, Argentina, have hired management firms that receive a fixed percentage of billings, increasing administrative costs to 20% of health spending. In Chile administrative and promotional costs account for 19% of managed care spending.

Brain drain. In developing countries, growth in private health care often draws badly needed human resources away from fragile public systems—as happened in Thailand in the 1980s and 1990s. Public clinics are left to care for the most vulnerable groups—the poor, the elderly, the disabled—with fewer well trained physicians.

Promising approaches. Government programmes have registered many successes in delivering basic social services to all citizens. Thus privatization need not be seen as the only option for reforming poorly run public services.

Relying on effective government systems. Many activities in the social sector produce public goods or have many externalities, requiring state involvement to provide basic services to all. The recent push to privatize basic social services has ignored the past experiences of rich countries—as well as of many developing countries today—which relied on state systems to provide basic social services to most (if not all) of their people when they were developing. Private actors played only a limited role.

Many of today's high-performing developing countries managed to improve health indicators early in their development—providing universal health care paid for out of government revenues. In many countries (Botswana, Costa Rica, Zimbabwe) better-off citizens opted out by taking private health insurance. Or, if private insurance was not available (Sri Lanka and Kerala, India), they paid private providers directly.

But for most of these countries' populations, better health was the result of universal and affordable care—financed by government revenues and made effective by allocating resources to the lower levels of the health system.

Strengthening the state. Regulatory capacity in developing countries has to be built up so that public and private provision works for all services and users. A key policy recommendation is to retrain government staff. This does not necessarily mean rich countries providing more technical assistance or technical cooperation—it means their paying for the transfer of skills to and exchange of experience among poor countries.

In health, the need for regulation applies to both privatized companies and existing private services, both to protect consumers and contain costs. Most health ministries in developing countries have extremely weak information systems, undermining their ability (or perhaps indicating their unwillingness) to regulate private providers. In South Asia, despite widespread private provision and high private spending, regulation has failed abysmally to ensure quality care for most users of private providers.

Regulation of clinical health services, for instance, requires tackling the proliferation of private providers—often untrained, unlicensed and unregulated. Governments must bring these actors into the public domain, which will require licensing and regular training to improve knowledge and skills. Training has increased provision of anti-malaria drugs in Kenya and improved management of acute respiratory infections and diarrhea in Mexico. In addition, the Rural Medical Association of West Bengal has adopted WHO's list of 40 essential medicines recommended for use by its members. Getting practitioners to restrict their use of these drugs will improve quality and control. Other measures for regulating providers include developing consumer protection legislation, promoting professional ethics and providing non-financial incentives, such as enhanced prestige.

Accreditation can be used to inform consumers about which private medical providers are registered. A professional body that offers accreditation and training to unregistered providers would benefit both providers and the public. It would build on the desire of providers for social recognition and prestige. And it would help promote the use of essential medicines through public campaigns.

Improving consumer behavior is also important for health care regulation. This can involve improving consumer knowledge or providing subsidies to make quality services more affordable. Governments can also create institutions that enable consumers to challenge private providers who offer poor quality care.

Involving non-governmental organizations. Social service provision by non-governmental organizations (NGOs) has been viewed as the “middle way” between market and state provision. For some analysts it provides a rationale for increasing the role of civil society organizations in providing health services. NGOs are often quite successful at filling gaps left by the public system. They are also useful in articulating community concerns, especially for poor people, to make institutions perform better. But NGOs should be a complement to, not a substitute for, state activities. Uzbekistan's mahalla committees are a good example in that regard.

Identifying better ways of financing services. Aside from increasing government tax revenues, there are ways of improving service tariffs and charges to make them more rational and equitable. Sudden, steep out-of-pocket health care costs can drive patients into poverty. Surveys of poor groups in 60 countries reveal a larger proportion of households with high levels of spending on health care.

In the absence of public financing, prepayment schemes—which contain high health costs by spreading risks among pools of individuals—can help deal with this problem. Such schemes have not only helped protect poor households from catastrophic health costs, they have also helped organize communities to sustain local public health systems.

International agencies promoting privatization of social services need to provide much more support in advance to build regulatory capacity. But they should do more than offer advice. They should also make it possible for developing country regulators to make field visits to other countries with more experience in private sector regulation.

In health or any other sector being opened to greater private sector participation, regulatory capacity should be built up before privatization. Otherwise, patients can find themselves facing more problems or constraints than before privatization. With better information on the private sector and stronger regulatory capacity, the state can ensure that the private sector plays a complementary role in providing and financing basic social services, such as health care.

The development of private health care in Uzbekistan

In previous chapters, much was said about the role of government in health care and the problems it encounters in health care. Private health care would make more resources available and also increase the choices individuals have. As a result of the right to quality medical assistance will be realized more fully.

Private health care in Uzbekistan is developing both through privatization of health care institutions and establishment of new private hospitals and clinics. Since 1994, 1,075 health care institutions have been privatized nationwide.

In order to ensure access to free primary health care services for broad population groups, a new type of government health care institution – rural doctor's posts – are being established nationwide to replace privatized rural outpatient posts.

The amount of fee-based health care has been increasing rapidly and the private sector's share in fee-based health care has grown very significantly.

Commercial medical assistance is being offered primarily at leading Republican Specialized Centers of Cardiology, Surgery, Urology, and Eye Microsurgery. These Centers are designed to provide highly specialized medical assistance to the population with gradual transition to principles of self-financing and cost-recovery. More than 57,000 patients, 75.4% of whose treatment was done on commercial terms, have been treated at these centers during this period.

The requirement for safety control of health services provided is the main principle in making a decision to set up a new private health care institution. To this end, the Government has approved a list of medical specialties for private practice¹. A Licensing Commission has been established under the Ministry of Health whose specialists have issued private medical practice licenses to 1,954 individuals and to 1,415 legal entities. Of the former, 33.5% are licensed to practice dentistry privately, 14.5% to practice general medicine privately, 12.8% to practice obstetric-gynecology privately, 6.8% to practice pediatrics privately, 6.8% to practice neuropathology privately, 5.4% to practice otolaryngology privately, 3.4% to practice urology privately, 3.3% to practice dermatology privately, 2.6% to practice cardiology privately, 2.3% to practice ophthal-

¹ According to Resolution no. 378 of the Cabinet of Ministers issued July 21, 1994.

Table 4.3

Trends in Development of Private Health care Institutions

Показатели	2000	2001	2002	2003	2004
Number of private hospitals (institutions)	89	96	113	36	141
Number of beds in private hospitals (thousands of beds)	2,1	2,2	2,5	2,8	3,0
Number of patients treated at private hospitals (thousands of persons)	27,1	34,5	36,7	41,2	42,9
Number of private outpatient institutions and polyclinics	145	1083	1159	1188	1220
Number of visits to private outpatient institutions and polyclinics (thousands of visits)	1997,9	1719,1	1898,2	1902,2	1913,7

Source: State Statistics Committee of Uzbekistan

Table 4.4

Health care facilities privatized, 1994-2005

Institutional profile	Total privatized
Rural precinct hospitals	31
Rural outpatient posts	39
Obstetrics and medical assistant posts	146
Commercially run departments and polyclinics	84
Physiotherapeutic hospitals and departments	30
Dental polyclinics and departments	469
Treatment and fitness dispensaries	14
Disused buildings and departments of healthcare institutions	207
Baby formula kitchens	55
TOTAL	1075

Table 4.5

Number of individual medical practice licenses issued by specialties between 1999 and 2005

Specialty	Number of licenses issued
Dentistry	694
General practice	284
Obstetrics-gynecology	250
Pediatrics	134
Neuropathology	134
Otolaryngology	105
Surgery	93
Urology	66
Dermatology	65
Cardiology	50
Ophthalmologists	44
Physiotherapy	35
Total	1,954

Table 4.6

Trends in financial receipts for paid medical Services

	2000	2001	2002	2003	2004
Total Revenues generated by rendering paid medical services to the population (millions of soums)	3619	5552	12347	16905	27088
Share in of public sector (%)	63,9	65,4	51,1	49,5	41
Share of private sector (%)	36,1	34,6	48,9	50,5	59

Box 4.3

Incentives for private health care

In order to facilitate the development of the non-state health care sector, Decree no. UP-2107 of the President of the Republic of Uzbekistan issued November 10, 1998, stipulated the following:

- Rental of health care facilities by the future owners of privatized health care facilities and subsequent sale to same are permitted;
- Private health care institutions are exempted from all taxes for two years after the date they were established by subsequently using the funds to acquire modern medical and diagnostic equipment for their institutions;
- Regional authorities are authorized to issue plots of land and sell nonresidential premises for the establishment of private health care institutions;
- Uztadbirkorbank is authorized to issue credit lines for financing new private health care institutions.

mology privately, and 1.8% to practice physiotherapy privately.

The majority of private health care institutions are formally small businesses. All performance indicators for private clinics show that private health care is developing very rapidly. The private sector for medicines and medications is developing even faster. Almost all pharmacies have become fully private institutions or have only a relatively minor government share. Dori-Darmon, the leading government pharmaceutical association, has been reorganized as Dori-Darmon Joint Stock Company. MedTexnika and Optika have become fully privatized companies.

Rapid development of private health care requires adequate safeguards for the rights of citizens – consumers of health services.

Health as a Guaranteed Right

Society's offering its citizens a wide choice of opportunities to promote their human rights is at the heart of the human capacity development concept. Sustainable human development is geared towards expanding opportunities for everyone – women, men, children, current and future generations – has to choose from while protecting the natural eco systems on which life depends on all over the world.

Human rights and sustainable human development are mutually dependent on and support each other.

In an address, UN Secretary General Kofi Annan noted: "Human rights belong to everyone. They are not a favor granted or taken away by government or any other power. Human rights are uniform and typi-

cal for all cultures and nations. It is the universality of human rights that empower them to cross any borders and overcome any hindrances."

No one is entitled to choose which rights are to be implemented or realized, or which ones to be ignored. Civil, economic, cultural, social, political human rights are integral and mutually related. Progress in one area leads to progress in the others, while a violation of one is detrimental to the others.

The concept of human development places particular stress on the right to fair and equitable access to:

- the natural and material goods a society possesses in order to demonstrate the capacity to work;
- education in order to foster an individual's inherent intellectual capacity and use it for spiritual and material self-realization;
- resources available in the society to maintain and improve one's health.

The three major indicators constituting HDI quantify these rights.

The right to life and health are fundamental human rights; accordingly, the attention of the international community is focused on the public and private mechanisms designed to guarantee them.

There are very good reasons why the international community drafted and is constantly improving upon legislation protecting human rights in health care.

First, in view of the equality and interdependence of various human rights, it must be recognized that without the right to a long and healthy life, which consti-

tutes the core of human existence, other rights lose not only their value but also their meaning.

someone with a naturally infirm constitution or who for some reason has lost his or her good health does not have the same opportunities others have to work and education. Lack of sound health, frequent or serious illnesses often are the cause of poverty due to inability to gain access to work and a decent income. The converse is also true: people without decent work and income often cannot maintain their health adequately. For this very reason, human life and health are the highest values, requiring comprehensive protection, including legal safeguards.

Secondly, with the essential role that health care plays in human and public life in the modern world, relations between a doctor and a patient go beyond the framework of ordinary interpersonal relations. They require not only professional knowledge on the part of health care workers but also observance of moral and ethical norms as well as legal knowledge on the part of citizens.

Thirdly, modern medical practice is increasingly intertwined with scientific research as well as testing of new drugs and medical technologies. It is becom-

ing more complex and powerful, constantly widening opportunities for effectively impacting the human organism, human reproductive processes, the psyche, genetic makeup, and the process of dying. Humans are subjected to a great deal of medical intervention, some of which may be intrusive. Many new technologies have inherently unpredictable consequences and the potential to be harmful to human life and health. The rapid development of biomedicine and biotechnologies has led to medical science's becoming increasingly centuries-old reliant on technology that raises ethical, moral, and legal questions. The ethical principles of modern medicine do not completely invalidate but do radically transform, the chief tenets of the Hippocratic Oath, the centuries-old benchmark of medical moral conscience. Medicine's traditional ethical values of mercy, do no harm, and charity are taking on new meaning in this changed context.

Fourthly, today the number of cases involving a violation of the norms of medical ethics and legal norms pertaining to public health care by health care workers is growing, as conflicts between physicians and patients are becoming more and more frequent. This is largely a function of greater legal awareness on the part of the citizens of a democratized society, and to

Box 4.4

International legislation on patient rights

The issue of patients' rights and their protection was raised for the first time at the international level in 1947 during the Nuremberg trials in connection with a patient's right to refuse to be a subject in medical experiments.

The UN Charter (1945), the Universal Declaration of Human Rights (1948), the International Covenant on Civil and Political Rights (1966), the European Convention on Human Rights and the Fundamental Freedoms (1950) set forth all the major guiding principles according to which modern legislation on patient rights have been developed.

Article 25 of the Universal Declaration of Human Rights declares, "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services".

The International Covenant on Economic, Social, and Cultural Rights adopted in 1966 recognizes the right of every person to the best physical and mental health possible.

The World Health Organization Charter provides a definition of health and asserts that it is a fundamental right of every person, regardless of race, religion, political beliefs, economic and social status, to have the best possible state of health.

The World Medical Assembly adopted the Lisbon Declaration on the Rights of Patients and declared that in cases when legislative norms in any country create any hindrances to implementation of patients' rights, doctors should strive to restore those rights and ensure their observance.

In order to promote human rights with regard to safeguards for health, the World Health Assembly developed Recommendations for the Provision of Medical Assistance in Rural Areas (1964, 1983).

The World Health Organization adopted the Declaration on the Promotion of Patient Rights in Europe (European Council for Patients' Rights in Europe, 1994), while the World Medical Association adopted the International Code of Medical Ethics as well as documents defining professional conduct and ethical norms for physicians: freedom of contacts among doctors (1984), doctor's independence and professional work (1986), training of health care staff (1986), negligence of doctor's responsibilities (1992), physician assisted suicide (euthanasia) (1992), telemedicine and medical ethics (1992), doctors' conduct in transplanting human organs (1994), etc.

In 1973 the World Medical Assembly adopted Twelve Principles for the Provision of Medical Assistance in Any National Health Care System. The General Assembly of World Medical Associations has developed A Code of Medical Ethics (1949, 1968, 1983) setting forth the general responsibilities of a doctor regarding professionalism, humanity, respect for patient rights, responsibilities towards patients, the obligation to preserve human life, to keep medical information confidential, to provide emergency assistance to any patient in need, and the responsibilities of doctors to one another.

a shift of focus onto doctors' criminal and civil liability whereby compensation for any harm to health can be sought through litigation or other legal recourse. This is illustrated by litigation practices in the U.S. and Western European countries where the number of medical malpractice suits awaiting adjudication exceeds the judicial system's capacity to try them.

International and national legislation on patient rights. Legislation on patients' rights is well developed. It is based on international declarations, covenants, and charters. The core of the legislation consists of:

- Definition of the category of health in positive terms as a state of full physical, mental, and social well-being, rather than concentrating exclusively on illness and physical debility;
- Recognition of the right of every person to the best possible physical and mental health;
- Definition of a patient's right to freely choose his or her doctor, and a doctor's right to choose a patient in such a way so as not to violate the rights of either the patient or doctor. It is a doctor's obligation professionally and ethically, with no exceptions whatsoever, to provide emergency medical assistance;
- Grant the patient the right to: obtain assistance from a doctor whose medical and ethical decisions are not subject to any outside influence; to agree to treatment or reject treatment based on adequate information; to be able to count on the doctor to treat all medical and personal information entrusted to him or her as confidential; to die with dignity; to obtain spiritual or moral support including assistance from a clergyman of any religion or to reject such support or assistance;
- Ensure guaranteed quality of medical assistance in rural areas, which should not differ in quality from medical assistance available in urban areas; and
- Take actions needed to reduce infant and child mortality as well as to promote healthy child development; improve all aspects of environmental hygiene and work place hygiene in manufacturing; prevent and treat epidemic, endemic, vocational and other diseases and combat them; put in place the prerequisites for ensuring medical assistance and medical care in case of illness.

Public health care legislation in Uzbekistan. The Constitution of the Republic of Uzbekistan guarantees the human right to qualified medical service and obligates the Government to fund public health care and maintenance programmes, to undertake measures to develop government and private health care systems, to foster improved public health, to promote the development of physical education and sports to foster as well as environmental and epidemiological well-being.

An important legal document for the protection of patient rights is the Law on Safeguarding the Health of Citizen (August 1996).

The law spells out and elaborates upon the provisions of the Constitution, and sets forth the main principles for safeguarding the health of citizens, the goals of health care legislation, of administration of the health care system of Uzbekistan, and guarantees for the provision of medical and social assistance, the health care rights of citizens and of specific groups of the population.

According to Article 3 of the Law, the basic principles of safeguarding citizens' health are: compliance with human rights in health care, access of all groups of the population to medical assistance, the primacy of preventive health measures, social protection of citizens whose health has deteriorated, and the unity of medical science and practice.

The law codified for the first time codified the procedure for establishing professional medical and pharmaceutical associations; set out and expanded the definition of privacy of medical information; and stipulated the legal liability for doing harm to the health of a patient, particularly on the part of health care staff who violate a citizen's health care rights.

Section 2 of the Law is dedicated to public health. Citizens of Uzbekistan have the inherent right to the protection of their health, ensured by the state regardless of age, gender, race, nationality, language, religious affiliation, social background, beliefs, personal and public status. Furthermore, the legislation sets forth and guarantees the rights of certain categories of citizens to protection of their health, including foreign citizens and persons without citizenship; citizens involved in certain types of professional activities; juveniles; servicemen, conscripts; disabled persons and survivors of emergency situations.

Article 24 of the Law on Safeguarding Citizen' Health laid down basic patient rights.

Qualified medical assistance should meet the highest standards of international medical science and practice, given that this criterion is applied in all cases of illness and to every patient. Hence, medical assistance should be considered qualified assistance when a specific medical institution, in accordance with its specialization and availability of staff, is responsible for providing or arranging to have provided medical assistance and bears responsibility for its non-provision or inadequate provision.

Article 41 of the Law stipulates that persons in possession of diplomas certifying their education at a higher or secondary special medical educational institution in Uzbekistan shall be entitled to engage in medical

Box 4.5

Basic patient rights in Uzbekistan

1. Respectful and humane treatment by medical and service staff;
2. Choice of doctor and health care institution;
3. Examination, treatment, and accommodation in conditions meeting sanitation and hygiene requirements;
4. Opportunity to arrange meetings with doctors and consultations with other specialists by the procedures established by the Ministry of Health of Uzbekistan;
5. Confidentiality of information regarding state of health, diagnosis and other information obtained or gathered during examination and treatment;
6. Voluntarily acceptance or refusal of medical intervention;
7. Receipt of information about one's rights and responsibilities and state of one's health, as well as choice of persons, who can receive information about one's state of health;
8. Receipt of medical and other services provided through voluntary medical insurance;
9. Compensation for, in accordance with procedures set forth in legislation, harm inflicted upon one's health during medical care or treatment;
10. Access to a lawyer or other lawful representative for the protection of one's rights;
11. Right to complain to the head, or to other officials of, a health care institution, to a higher administrative body, or court.

and pharmaceutical practice. Certain types of activities in medicine and pharmacy listed by the Ministry of Health require a diploma attesting to medical education and a license.

In order to facilitate qualified medical assistance, the Law also envisions that medical and pharmacy staff with less than four years experience shall be permitted to engage in respective activities after training at respective educational institutions or based on an affidavit from the Ministry of Health.

Another law promoting patients' rights is the Law On Safeguarding Consumer Rights. In accordance with this Law, a patient shall be entitled to receive information about a medical institution, its location, office hours, list of fee-based medical services indicating their cost, terms and conditions for providing these services including information about preferences for certain categories of citizens, features and quality of medications, their cost, guarantees, responsibility of executor, as well as information about the qualifications and certification of its specialists.

Fee-based medical services shall be provided in accordance with a contract, which sets forth the conditions and timeline, payment procedures, and the rights,

responsibilities, and liabilities of the parties.

Payment for medical services shall be made at banking institutions or medical institution by issuing the consumer a check. This document is a guarantee to file a complaint if poor-quality service or inadequate medical service is rendered.

Along with rights, a consumer also has responsibilities, such as complying with the requirements to ensure the provision of quality commercial medical services, including the provision of information essential for this purpose.

In accordance with legislation, medical institutions are responsible to the consumer for non-compliance with execution of contractual terms or for improper execution of contractual terms, failure to make the right diagnosis using prescribed diagnostic methods, prevention and treatment permitted in Uzbekistan, and for harm inflicted upon the health and life of the consumer.

The consumer shall be entitled to compensation by the health provider for damages or losses in case harm is inflicted on the consumer's life or health as a result of non-execution or improper execution of contractual terms by the provider, as well as compensation for any moral harm suffered.

Should a medical institution fail to comply with its responsibilities by the deadlines of services, the consumer shall be entitled:

- Set a new timeframe for provision of services;
- Demand costs of services provided be reduced;
- Demand provision of the service by another specialist;
- Terminate the contract and demand reimbursement of losses.

The consumer shall be paid fines for failure to meet the deadlines set in the contract.

Subject to agreement of the parties, payment of a fine may be made by reducing the cost of medical services provided, offering additional services free-of-charge, and by reimbursing part of an advance payment made earlier.

The medical institution shall be released from responsibility for non-performance or wrongful performance, if it can prove that nonperformance or wrongful performance was due to force majeure circumstances or other statutory grounds.

Although the legislative framework created for reforming the health care system guarantees basic patient rights to qualified medical assistance, many patients' rights matters require codification.

First, Uzbekistan has no special law on patients' rights

yet. Liability of health care staff is treated in various laws; and while the Law on Consumer rights protects the rights of consumers of medical services, it does not cover all patient rights. Only a specific Law on patients' rights can ensure legal implementation in specific situations of relations among private health service providers of the Doctor's Code of Honor, the Hippocratic Oath, doctor's oath, oath of mid-level health care staff. The emphasis should be on the prevention of conflict among all participants of the health care market by putting in place modern legal norms and methods of dialogue.

Secondly, patients' rights should be extended to private and government health care institutions where medical errors can be caused by lack of modern diagnostic and treatment equipment, instruments, and medications.

It is essential to draft and adopt a law on medical insurance to facilitate stable funding for the health care sector and reduce the incidence of malpractice.

Thirdly, there is a need for major public awareness raising campaigns. The majority of patients are not aware of their rights and do not litigate against low quality and incompetent treatment. There is no established judicial practice for malpractice lawsuits against healthcare staff.

Box 4.6

Recommendations to improve legislation protecting patient rights

1. Adoption of laws on the protection of patients' rights and on medical insurance;
2. Boost the work to form legal insight to healthcare as the life support system and a key factor to ensure national security. Adoption of Code of Ethics for Health Care Workers;
3. Create a system enabling all stakeholders to obtain objective information on implementation of citizens' rights in the provision of public health care assistance;
4. Develop legal practices for protection of patients' rights in keeping with international standards;
5. Set up a system for state and public monitoring of compliance with patient rights and health services consumers;
6. Foster a legal culture in health care services, develop proposals to provide legal training for health care staff, to train lawyers to work in the health care sector and in services for the protection of patient rights and health services consumer rights.

Rules of medical ethics are stipulated abroad in so-called moral codes (deontological codes). For instance, the American Medical Association has adopted General Rules of Medical Ethics designed to assist doctors in maintaining superior ethical conduct in

individual and collective practice. These are not laws but they represent a standard for the doctor-patient relationship as well as for relations with colleagues and specialists of similar professions. In this regard, it appears essential to develop a Code of Ethics for Doctors in Uzbekistan.

Improving the legislative framework for the private health care and public health care system is a mechanism of legal regulation to enhance the quality of medical assistance provided and to improve health care sector management.

Full implementation of patients' rights, maximum protection of and security for patients' rights, and the best possible state of patients' health – these are the ultimate social objectives of a well designed health care system effectively regulated by the government.

Safeguarding health care consumer rights – a function of civil society of utmost importance

Government creates the system of guarantees and rights of citizens to access to basic medical assistance. The legislative branch is responsible for developing and adopting laws upholding patients' rights. Executive branch bodies exercise oversight of implementation of legislation to safeguard citizens' health and patient rights. The judiciary's mission is to settle all disputed issues among patients and health care institutions.

However, practice has shown that the above-mentioned branches of government by themselves are not able to fully address the issues of patient rights.

Analysis of the complaints from users of healthcare services has shown that their main reasons are:

- Inadequate awareness of the population about free-of-charge medical services and patient rights;
- Limited access to free-of-charge medical assistance;
- Growing public dissatisfaction with the quality of medical and sanitation assistance and increasingly commercialized health services;
- Unaffordability of medications for the majority of the people due to income-cost gap;
- Difficulties of proving one's rights;
- Lack of legal counseling on medical assistance issues.

In this regard it is important not only to create an adequate legislative and regulatory framework for regulation of the mechanisms to ensure the quality of medical assistance, to improve the health care management strategy, to regulate the health services market, to set prices and to make health care cost-effective but also to establish, as is done in other parts of the world,

public oversight systems of health care practices.

Broad involvement of civil society institutions in Uzbekistan in patient rights issues is necessary for the following reasons:

First, today it is quite clear that government institutions turned out to be unprepared for the rapid pace of health care reforms and were unable to ensure adequate quality control of commercialized and private clinic services, leading to high prices for health services whose quality was far below their prices.

According to the findings of inspections by the State Committee for Demonopolization, systematic violations of consumer rights in the health services sector include:

- Lack of information or lack of access to information about types of services and their costs;
- Lack of clear and reliable information about health care institutions and their office hours;
- prices for health services, inter alia, billing for lab costs, diagnostic services, medications, chemical reagents not actually provided;
- Providing health services without making contracts with consumers – patients;
- Failure to issue receipts and financial records about services rendered to consumers, failure to reimburse payments for services not provided;
- Use of medical equipment and devices without metrological inspection and human safety guarantees;
- Ineffective use of diagnostic equipment due to shortages or lack of essential reagents and spare parts; and
- Lack of adequate information about a health care institution's specialists needed to develop tariffs for commercial health services, etc.

Secondly, the state of human and financial resources was inadequate for ensuring broad public awareness about patients' rights and health care services guarantees.

According to a survey conducted in 2004, 33.0% of respondents assessed their awareness of their rights guaranteed by the Constitution, Laws, Decrees of the President and Resolutions of the Cabinet of Ministers as good, 36% assessed their awareness as not good, and 27.4% responded they are not sure they could successfully defend their rights.

Given the background of low public legal awareness, another problem comes up naturally: many citizens of Uzbekistan feel the law does not protect their patient rights from being violated by health care workers and feel they would be vulnerable and helpless should they should fall ill.

Box 4.7

Results of patient survey of level of professionalism and quality of work of medical workers

1. Respondents replied as follows to the question: In your opinion, what is the level of professionalism and of the quality of work of medical workers?
2. 12% answered: high
3. 64.6% answered: average
4. 19.5 % answered: low
5. 4.6% were undecided.

Box 4.8

Guaranteed free-of-charge medical and sanitation services

The Government provides free-of-charge health services to the citizens of Uzbekistan in the framework of guaranteed medical and sanitation services including:

1. Emergency medical assistance;
2. Outpatient and clinic treatment;
3. Public immunization and vaccination against a number of infectious diseases;
4. Specialized medical assistance for socially significant diseases and illnesses of danger to the community (tuberculosis, cancer, mental illness, drug abuse, endocrinological disorders, and work-related diseases);
5. Examination and treatment of children (except at commercialized institutions);
6. Examination and treatment of 15- to 17-year-olds and males of conscription age (18-27) at the request of the Conscription Commission;
7. Obstetrical services (except at commercialized institutions); and
8. Treatment of special categories of patients (the disabled, war veterans, orphans) at government health care institutions.

The survey revealed that only 16.3% of respondents said they feel the law protects them fully against possible violation or infringement of their patient rights; 54.8% feel it partially protects them; 9.5% do not feel it protects them at all and feel completely vulnerable; 9.3% did not respond.

The survey also identified poor public awareness of state guaranteed free-of-charge medical assistance. The majority of respondents do not have a clear and definite understanding of what health services at which health care institutions should be provided free of charge to which social groups.

Furthermore, there is no common approach to provision of free-of-charge services, yet every health care institution is faced with having to resolve free-of-charge medical assistance issues that come up every day.

Figure 4.4
Distribution of health care consumers by how well they know their patient rights

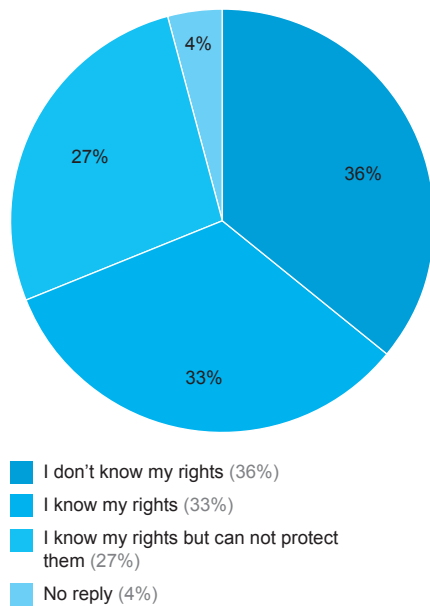


Figure 4.5
Distribution of health care consumers by how confident they are their rights are protected

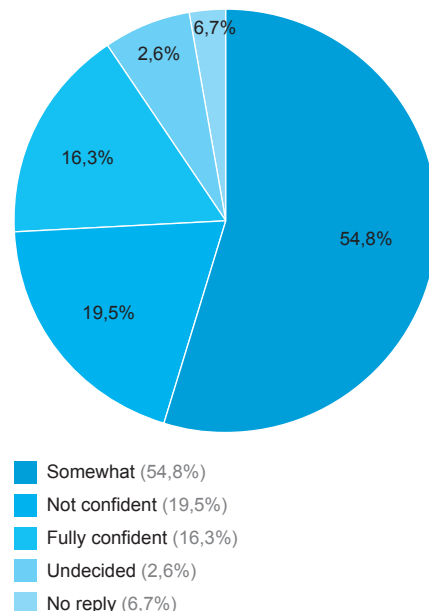
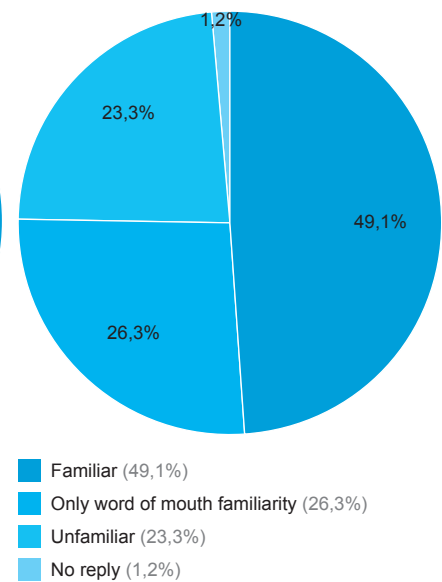


Figure 4.6
Distribution of health care consumers by how familiar they are with free-of-charge health assistance



Thirdly, government institutions are not always interested in open discussion of the problems and flaws in the health care sector since they report to the government. There is an acute need for an independent approach to assessing the quality of health services provided and wide-ranging discussion by stakeholders and society in general of the problems that exist.

Problems of quality medical assistance are a pressing issue all over the world but, as practice has shown, only an independent study can yield an objective assessment of the services provided. Consequently, there is a need for organizations and institutions of independent expertise.

Although hiding facts and circumstances posing a danger to human life and health is punishable by national legislation, it is not uncommon for officials to hide such facts.

Fourthly, correcting the flaws in the health care system will proceed more expeditiously by involving civil society institutions in the process. Public oversight can provide not only transparency and openness but also essential pressure on the vested interests of government institutions unwilling to resolve problems due to various objective and subjective factors.

For instance, the Federation of Consumer Rights Societies sparked major interest in the public and society with its publication in the press of an article titled “Protection Line” dedicated to the legal grounds for safeguarding consumer rights to health care services and with two articles titled “Crime Without

Punishment” and “Problem? Call This Number” both geared to raise public awareness of patients’ rights and procedures for obtaining medical assistance.

The Consumer Rights Federation and the Ombudsman stand out among civil society institutions for their pro-active efforts to involve the public in oversight of human rights practices in the health care sector.

Adoption of the Law on Consumer Rights Protection by the Parliament (Oliy Majlis) of Uzbekistan in April 1996 was the first step toward identifying the consumer as a separate player in market relations. It codified for the first time in national legislation internationally recognized consumer rights and guarantees of their implementation as well as safeguards against harm to the life, health or property of citizens, and spelled out the right to demand compensation for moral damage inflicted and to establish jurisdiction as the choice of the plaintiff in cases of consumer rights infringement. Broad-based rights of public consumer associations that enable such associations to get involved in shaping state consumer policy have become a major guarantee of consumer rights.

The Consumer Rights Federation (CRF) of Uzbekistan is a non-governmental non-profit organization that is a coalition of 14 territorial, 210 municipal and district consumer rights societies, and 10,442 support groups in residential communities, organizations, collective farms, companies, and academic institutions.

The more than 280,000 members of CRF are active in advocating public legal awareness and participate

in public oversight to prevent the sale of low quality goods and services in the domestic consumer market and prevent the infringement of consumer rights.

Safeguarding consumer rights, in 2005 alone, CRF and its local chapters surveyed nearly 3,000 respondents in 11 regions of the country to determine how much they know about their own rights and how satisfied or dissatisfied they are with the quality of the health services they receive.

Specialists of the Federation of Consumer Rights Societies use a Hotline Programme to interact directly with consumers which gives them the chance to perfect their skills in extrajudicial debate settlement, and to identify the universe of issues and problems that health services consumers encounter in defending their rights, all of which helps the specialists better assess the emerging situation in the goods and services market and develop recommendations for preventing conflicts between consumers and entrepreneurs.

Responsibilities for monitoring civil health care rights: may be delegated to the Ombudsman for Patients' Rights to arrive at peaceable resolution of disputes over assessments of the quality of services rendered.

The Ombudsman for Patients' Rights not only critically analyzes provisions of laws and regulations that violate patients' rights but also works to gain the best possible access to objective information about health services.

Its role can range all the way from specific assistance to specific patients (e.g., in filing claims) to major analytical, statistical, publication, data base, and sociological survey projects. In monitoring patients' rights, it makes use of records of complaints, medical histories, report data, public survey findings, and reference tools.

Among its duties and responsibilities will be to assess, in accordance with applicable health services standards which dictate how much assistance is required, the quality of health services rendered. Other duties will be to investigate cases of discrimination, infringement of patient's rights to freedom of choice, health care safety issues, disregard for patient dignity, lack of access to medical information and to preliminary information about health services costs.

Public oversight of consumer rights

Due to weak public oversight of patient rights and to inadequate legal consultancy assistance for health care patients to file complaints with various government institutions with any regularity, there is a great deal of room for expanding the role of civil society institutions in safeguarding patient rights.

Major causes of complications of public patients' rights are:

1) Issues of safeguarding patients' rights are at cross-purposes with the rights of health workers, primarily those working at government health care institutions.

Inadequate state financing of health care institutions providing free-of-charge services is cause for numerous problems that result in complaints about poor quality of services. These include the inability to introduce the latest medical treatment systems, lack of enough modern medical equipment, ill-equipped medical institutions, clinics, hospitals, inpatient hospitals, and, finally, lack of financial incentives for healthcare workers and improvement of their working conditions.

2) The lack of legislative and technical rules and regulations of the mix of commercial and free-of-charge health services offered by government health care institutions often creates confusion, and ultimately, failure of health care providers to meet their responsibilities to their patients.

Box 4.9

Findings of survey of the quality of in-patient health care services

According to the findings of a survey of 1,000 residents of Tashkent-city conducted in January 2006 at 20 inpatient health care institutions and 7 family clinics, only 12% of respondents were aware of the free-of-charge services those institutions and clinics provide.

Of those receiving in-patient treatment:

- 62% of respondents (615 patients) were asked by health workers to purchase prescription medications without having given them a prescription;
- 56% (558) brought their own bed linens and sleepwear;
- 87% noted the low quality the food although it was paid
- 64% acknowledged their ignorance of their rights as health services consumers; and
- 51% acknowledged they don't know how to go about exercising their commercial health services rights.

Meanwhile 95 % (687 persons) of those surveyed were not issued financial records confirming health services they had received.

In general, 773 or 77% of respondents voiced their dissatisfaction with the quality of the services provided.

Individuals and organizations that take action to demand that their constitutionally guaranteed rights be implemented may have a significant impact on the ability of health care institutions and other individuals to get their rights implemented.

3) Lower access of low income and even mid-income individuals to quality commercial health services.

The economic difficulties Uzbekistan experienced could not help but negatively impact the financial status of the people as well as their ability and capacity to pay for health services. The economic situation has hit socially vulnerable groups of the population particularly hard.

Lack of transparency in the delivery of guaranteed medical assistance prevents those in need of such assistance from receiving all the assistance they need.

Ignorance of government guaranteed rights and lack of detailed patient information about free-of-charge services result in informal fees and popular discontent.

4) Widespread informal fees charged for health services at free-of-charge state health institutions

The programme of government guarantees for free-of-charge health services is not fully funded so any differences must be paid for by the patients themselves either legally or non-legally.

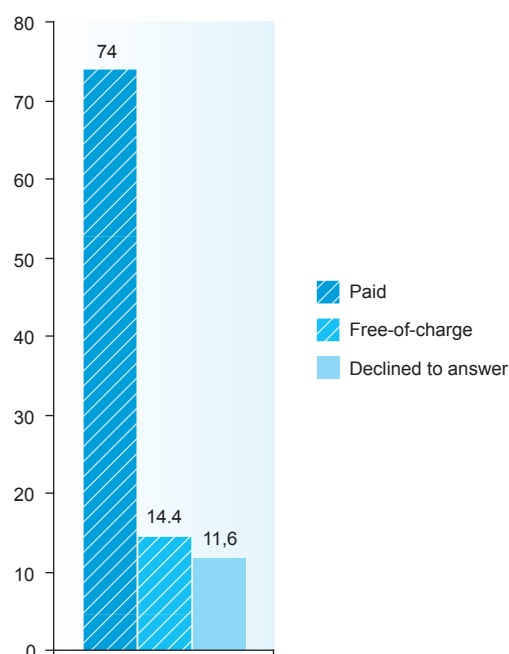
For instance, a great deal is being done in Uzbekistan to promote public health, particularly women's and children's health. "Soglom Avlod Uchun" International Foundation has been established. A number of national programmes have been developed. Laws and government resolutions have been adopted wherein specific measures are earmarked for safeguarding reproductive health, especially women of reproductive age. The Government is allocating budget appropriations to support women during pregnancy and delivery. And yet a survey conducted by the Federation of Consumer Rights Associations in 2004 found that about three-fourths of respondents with children under two years old reported they had paid for all health services provided in the maternity hospital. Only 14.4% of women surveyed said that the health services they had received were provided free-of-charge. Another 11.6% refused to discuss it.

The fact that 62.2% of respondents made cash payments to maternity hospital medical personnel illustrates there is no accounting controls over payments for health services provided at maternity hospitals and other institutions where pregnant women are treated medically. Only 6.8% made bank transfer payments to the bank account of the maternity hospital or paid the maternity hospital cashier. 31.1% refused to specify how they made payments for health services provided at the maternity hospital, which in itself consti-

tutes a violation of legislative rights of health services consumers.

In the meantime, exposing such practices, let alone bringing those responsible to accountability, is complicated by the reluctance of many patients with a vested interest in continuing to receive good high quality medical treatment to acknowledge their payments for free-of-charge services. Furthermore, in the eyes of many patients and health care workers, this practice is justified by the fact that health workers earn small wages incommensurate with their qualifications and their patient responsibilities.

Figure 4.7 Findings of the survey of services fees in maternity hospitals



Box 4.10

Sociological survey findings

Significant differences were found nationwide among various provinces and areas between the percentage of obstetrics services provided for a fee and those provided free-of-charge. For instance, in Tashkent-city 76.5% of women surveyed said they had paid for gynecological exams during their pregnancy. By comparison, in Navoi Province only 10.5% did so. The share of urban women who paid for gynecological exams during pregnancy exceeded the share of their rural counterparts who paid for gynecological exams by 50%.

Female survey participants with children under 2 years old were very reluctant to cite the specific amount they had paid for health services provided at a maternity hospital. Approximately half of respondents – 49.3% flatly refused to discuss the matter. 36.2% of respondents reported paying the maternity hospital up to 50,000 soums for health services, 9.0% reported paying from 5,000 to 10,000 soums, while 3.1% reported paying from 10,000 to 150,000 soums, and as many as 2.4% reported paying over 150,000 soums.

Public organizations are able to discuss these problems openly but are unable to resolve them. Furthermore, because they are aware of the objectively limited ability the government has to address these problems, public organizations are easing up on efforts to pressure government institutions.

The situation with payments clearly illustrates the utter disarray and complete lack of any system in the various health services provided by health care institutions.

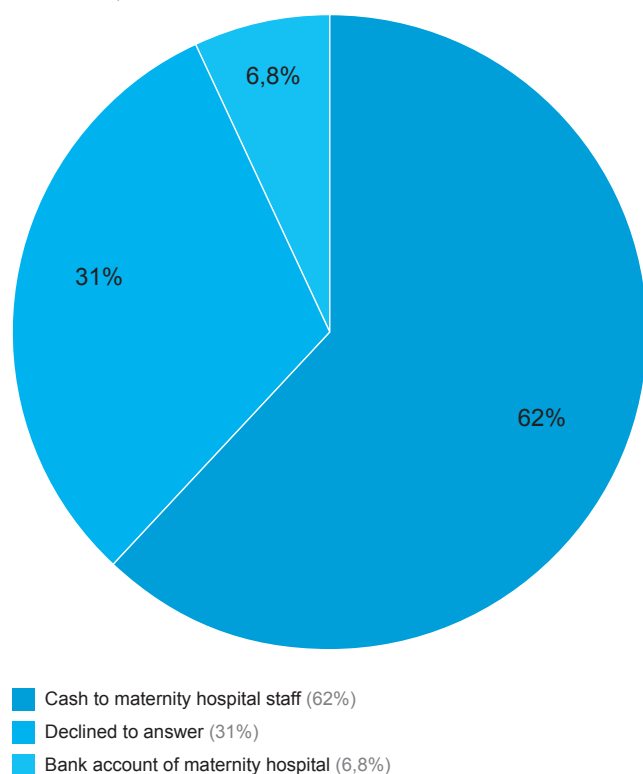
Findings of sociological studies indicate that the same services may be free-of-charge at one health care institution, but not at another. Fees for the same services differ from institution to institution, sometimes radically.

5) Lack of research-based approved standards of many health services.

It is essential to complete the efforts begun to devise a single system of standards for health care in Uzbekistan to make it possible to resolve problems such as:

- Efforts to create a statutory framework for the health care sector are completely uncoordinated;
- Government commitments to provide guaranteed free-of-charge medical assistance are greatly underfunded;
- There is a need to prioritize and economize what

Figure 4.8
How did you pay for health services in the maternity hospital?



limited financial and material resources allocated for health care to cope with rising costs of health care and medical assistance;

- As new medical technologies continue to be spawned, doctors are presented with so many new choices that making optimal clinical decisions becomes more and more complicated;
- There is a trend for the costs of and the number of diagnostic and treatment procedures prescribed by doctors to rise unduly;
- An increasing number of medical schools no longer agree with the consensus as to how to prevent, diagnose, treat, and provide rehabilitation for one and the same illness.

Meanwhile, there are no uniform nationwide standards for quality control of health services equipment, diagnostics, or treatment.

6) The lack of independent and professional public organizations engaged in safeguarding patients' rights.

A lack of independent institutions and experts practicing medical law to contact for assistance when patients' rights are violated leaves patients no recourse but to deal directly with the violators themselves – district, municipal, provincial health authorities, the Ministry of Health, etc.

Today's lawyers and judges lack the professional qualifications needed to defend patients' rights and interests effectively. Without the specific knowledge needed to evaluate the medical and legal aspects of complaints about the quality of health services, they are not confident in defending the rights of patients. That may perhaps explain why court cases regarding violations of patients' rights remain unjudicated, or simply languish, for years.

Unfortunately, independent assessments of the quality of health services present a major problem in that unwritten rules unite health workers with health care institutions who hinder efforts to make objective assessments of their performance. Doctors are extremely reluctant to issue negative assessments of a colleague's performance, leaving the patient virtually defenseless.

In essence, those assessments should be conducted by health worker professional associations and by medical practice licensing bodies that hire outside experts to supervise licensees' performance.

Independent institutions professionally involved in safeguarding patients' rights should focus their activities on:

- Assessment and analysis of the quality of health services provided and the public's input regarding treatment costs;

- Pre-trial investigations: with healthcare institutions, private practitioners;
- Qualified counseling for patients encountering difficulties over complaints they have filed;
- Improvement of the skills of experts and lawyers working as patients' rights advocates;
- Scheduling and targeting the monitoring of and quality control of medical assistance; and
- Raising consumer awareness of consumer rights safeguards to create a safeguards mentality.

Important means of strategy implementation include roundtables, conferences, seminars, sociological studies available to the public, and information in the media about rights to quality services at primary and other levels of health care. This will indicate practical significance and effectiveness of legislative and regulatory acts being adopted, regulations related to various dimensions of our socioeconomic life, viewing them from the position of constitutional guarantees through the prism of the law on consumer rights.

4.2 Health care financing

A review of international patterns of health care shows there is a large range of possible health care funding schemes. In most countries the principle of health insurance predominates over completely private and completely public schemes.

At the same time certain parameters, if singled out, can be useful in discerning what health care system finance schemes in various countries have in common. Such parameters include: type of ownership; ways of funding (funding sources); incentives for health providers (producers) and patients (consumers); and ways and methods of evaluating how much and how well health care services are provided.

Each country has its own method of obtaining financial resources to provide health care, to protect and improve public health. The method depends largely on a country's traditional economic, political, moral and ethical considerations which play a role in how much money is allocated for health care services and in how well and efficiently it is used.

The adequacy of a country's health care system can be measured by a number of indicators. With all the differences in the health care systems found throughout the world, the role the state plays in them is key. There are basically three main roles: paid health care using private health insurance and based on market laws; public health care financed from budget funds; and social health insurance in a multi-tiered funding system based on market laws.

The first is paid for by the patient out-of-pocket when there is no public health insurance. The part of demand for health care not met by the health care market (low-income people, retirees, unemployed) is covered by state financed public health care programmes. The U.S. Medicaid system based on private providers who supplement government health care programmes for the poor and Medicare for retirees illustrate the so-called "American, market, paid" system also less well known as the private health insurance system.

The main feature of the second pattern known as "state, budget, state budget" is that the state plays the major role or exclusive role in the system. Health care is financed by funds from the State Budget drawn from corporate and personal taxes. Except for a certain small set of medical services, health care is free to the public. The state is the major buyer and provider of health care services for most public demand for health care services. In such countries, the market plays a secondary role and is usually controlled by the state. Such a model has been in existence in the U.K. since 1948, in Ireland since 1971, in Denmark since 1973, in Portugal since 1979, in Italy since 1980, in Greece since 1983 and in Spain since 1989.

The third pattern of financing is social insurance also known as regulated health insurance. It is based on the principles of a mixed economy and combines the health care services market with a public regulation system and social security to ensure that all population groups have access to health care. It provides, first

Box 4.12

Health care expenditures in some countries of the world in 2001 (%)

	Government expenditures as % of GDP	Private expenditures as % of GDP
Uzbekistan	9,6	2,5
France	7,4	2,3
Japan	6,5	1,4
Germany	8,6	2,3
UK	6,4	1,3
Estonia	3,9	1,2
Turkey	4,3	2,2
Ukraine	3,3	1,4
Spain	5,4	2,2
U.S.	6,6	8,0
Russia	3,5	2,7
Kazakhstan	1,9	1,6
Kyrgyzstan	2,2	2,1
China	2,0	3,8

of all, compulsory health insurance for the needs of the entire or almost the entire population of the country with partial public participation through insurance funding. The state guarantees that the health care needs of all or almost all citizens will be met regardless of their income without violating market principles for payment for health care services.

The role of the health care market is limited to meeting medical needs that go beyond the state guaranteed level, thus ensuring freedom of choice and consumer rights. The financing capacity this kind of health insurance is flexible and sustainable in that it has three sources of funding: insurance company revenues, deductions from wages, and state budget funds.

Health care financing in Uzbekistan during the early stages of economic reforms, as was the case in other CIS countries, used to be based completely on government budget appropriations. As noted above, it provided easy public access to health care services but the quality of those services did not meet international standards because of inadequate equipment and poorly trained staff.

The economic crisis in the USSR prior to its collapse, the sharp fall in budget revenues in Uzbekistan in the late 1980s and early 1990s significantly impacted health care issues at all levels and made health care services extremely vulnerable to the sharp economic depression Uzbekistan experienced until 1996. Inadequate funding prevented the introduction of new medical technologies and made it difficult to maintain existing technical infrastructure.

Currently Uzbekistan's total health care budget on paper does not exceed 3.1% of GDP - a very small indicator, considering how small the country's budget is.

This indicator parallels another negative indicator, government health care expenditures which constitute 2.3% of GDP. To some extent, this is due to the lowering of the commercial tax burden brought about as part of the economic reforms. Correspondingly, the share of government revenues and expenditures is decreasing. Nevertheless, the government is not reducing its focus on health care, as growing public health care expenditures as a share of total budget expenditures show.

Although government health care expenditures are markedly smaller than those allocated by developed countries of the world, they are comparable or slightly higher than the expenditures of countries in similar socioeconomic conditions, including CIS countries.

The need to adapt the health care system to market reforms was required in order to be able to initiate major health care financing reforms. It was no coinci-

Box 4.11

Sources of health care financing in the Republic of Uzbekistan

According to Article 9 of the Law of the Republic of Uzbekistan On Public Health Care, the main funding sources for the national health care system are:

- Government budget appropriations;
- Resources of targeted funds geared toward public health care;
- Health institutions funds generated by provision of medical services above the government guaranteed services and by medical services provided on a commercial basis;
- Donations and contributions by companies, agencies, organizations, public associations and individuals made to health care institutions;
- Bank loans; and
- Other sources not prohibited by law.

dence that a mixed financing system was introduced for the most part by a gradual phasing in of commercialized medicine as part of health care reforms that began in 1998.

Managers of health care institutions are authorized to generate additional revenues from the rental of vacant and temporarily unused space in their buildings, from the production and sale of their respective services, and to accept donations from legal entities and individuals. They are entitled to form their own Development Fund from budget funds savings. Resources of the Development Fund can be earmarked for activities to improve technical infrastructure, provide social and financial incentives for the staff, and prioritized payoff of loans.

Introduction of fees partially offsetting the cost of meals and medications provided to hospital patients is an additional source of revenue. Although the share of these funds in the composition of healthcare funding is not substantial, it increases every year.

Development of private health care paralleled development of the public sector. Private health care is developing primarily in the form of private clinics, including those established at privatized health care institutions and private medical businesses. More than 200 health care institutions previously financed by government budget appropriations had been transferred to full self-financing by 2005.

In order to protect vulnerable groups of population from the heavy financial burden of healthcare fees, the government specifically designated certain types of state funded health services as primary medical assistance services to be provided to the public free-of-charge. They included outpatient health services, obstetrics services, emergency medical assistance,

treatment of socially significant illnesses (tuberculosis, endocrinological diseases, cancer, mental diseases, sexually transmitted infections, HIV/AIDS, etc.) as well as children's health services, including vaccinations and treatment of infectious diseases. At a minimum, 20% of private clinic services should also be provided free-of-charge to the most vulnerable population groups – the retired, the disabled, children, the poor – by reimbursing their costs using government budget appropriations.

The breadth of primary health services coupled with

the lack of medical insurance means that public health care financing is still implemented primarily through budget appropriations. Meanwhile, more than 80% of health care financing is covered by local budgets. Budget appropriations are earmarked for health care institution operating costs, major renovations and regular maintenance, purchases of equipment, construction of new facilities, etc.

As the share of primary health care services more than doubled (by a factor of 2.2 to be exact) and as prevention services doubled, the pattern of government bud-

Box 4.12

MFI funds for health care development in Uzbekistan

A project funded by a World Bank Health-1 Loan focusing on primary health care reform has been successfully implemented. The project was aimed at procurement of technical equipment for rural doctor's posts in a number of provinces, as well as improvement of the health care management system and health care financing system taking into account market prerequisites. The legislative framework for transition to a more effective financing system based on the number of people served has been created as part of the project's implementation.

Across-the-board implementation of this system should make it possible to earmark more funds for the primary health care sector, health care services for women and children, to streamline the distribution of budget expenditures, etc. For instance, in the case of Ferghana, the relative share of expenses of primary health care institutions there increased from 13.6% of total health care expenditures prior to the experiment to 24.3% after the experiment.

A project costing a total of USD 70 million, of which USD 40 million from an ADB preferential loan, is being implemented to improve maternity and childhood protection, enhance technical infrastructure for obstetrical and hematological services. The project will be implemented in 6 pilot districts as well as at hematological centers and blood transfusion stations nationwide.

In order to enhance the reforms in the primary health care sector, introduce GP practices nationwide, and test a municipal model of primary health care, Health 2 Project is being implemented in the cities of Tashkent, Samarkand, Gulistan, and Margilan with the involvement of the International Development Association (IDA). Total project cost will be USD 118.1 million, including an IDA loan in the amount of USD 39.5 million.

To promote implementation of the Government Programme for Health System Reform, improve infrastructure of the National Emergency Medical Assistance Research Center and its provincial branches, an agreement with the Islamic Development Bank was signed to procure equipment in the amount of USD 23.8 million. An agreement was signed with KFAER to procure equipment for 171 emergency medical assistance departments in major central, district and municipal hospitals.

A contract for procurement of diagnostic equipment and installation at cancer treatment dispensaries was signed with PRC, and discussions are ongoing with MFI to procure equipment for provincial children's hospitals, for establishing and equipping provincial counseling and diagnostic centers, etc.

The Government of Uzbekistan has signed agreements with the World Bank for grants to implement the National Flour Enrichment Programme designed to enhance the effectiveness of measures to reduce the incidence of iron deficiency anemia, and with the Global Fund for grants to combat AIDS (USD 24.6 million) tuberculosis (USD 12.6 million) and malaria (USD 2.5 million).

Box 4.13

Special Funding Procedure for National Specialized Centers

National specialized centers have mixed funding sources – government budget appropriations, which are reduced every year due to their gradual transition from 2008 to self-financing, used for operating costs, cost-recovery, income they generate themselves, as well as grants and donations

Procedures and tariffs for providing fee-based highly qualified medical assistance, for free-of-charge treatment of patients with medical benefits, for gradual transition of the Centers to self-financing, and for cost-recovery have been introduced.

Medical equipment and instruments the Centers import for their own needs for 10 years (until December 31, 2012) purchased with investment funds released for Center development and equipment are completely tax exempt and duty free (but not exempt from customs clearance fees). The amount of funds at the disposal of the centers amounted to 149.8 million soums in 2004 alone or three times more than in 2003 (273.5 million soums) and the amount in 2005 was 1.8 times more than the amount in 2004.

Quotas and procedures for reimbursement of expenses for patient emergency treatment services were introduced to streamline specialized medical assistance at the centers. The quota for the surgery center was set at 2%, at the center for eye microsurgery at 3%, at the cardiology center at 5%, and at the urology center at 8%. Starting July 1, 2004, emergency patients were hospitalized according to approved norms and procedures governing reimbursement of emergency medical assistance expenses.

Table 4.7

Total Healthcare Expenditures in Uzbekistan in 1998-2005 (bln. soums)

	1998	1999	2000	2001	2002	2003	2004	2005
Budget appropriations	41,7	59,7	81,9	125,6	180,6	234,2	277,4	361,9
Commercialized services*	1,7	2,5	4,4	8,1	12,3	16,9	27,1	34,7
Donations**	0,1	1,1	1,2	2,5	1,6	3,0	2,4	2,2**
Inpatient board fees **	0,6	0,8	0,7	0,9	1,2	1,57	1,3	1,7**
Total	43,9	63,8	87,4	134,7	195,73	256,3	308,1	393,3
% of non-state budget funds	5	6,4	6,3	6,7	7,7	8,6	10,0	8,6

Source: * State Statistics Committee data, ** Ministry of Health data

Table 4.8

Distribution of healthcare financing between central and local budgets (%)

	1998	2000	2002	2003	2004	2005
National budget	100	100	100	100	100	100
Local budget						
National budget	19,3	12,8	11,9	12	12,04	11,9*
Local budget	80,7	87,2	88,1	88	87,96	88,1*

Source: Ministry of Finance, Ministry of Health*

Table 4.9

Composition of operational costs in the healthcare sector covered by government budget (% of total expenditures)

Composition of operational costs	1998	1999	2000	2001	2002	2003	2004	2005
Inpatient care	72,0	68,4	46,4	45,7	46,8	46,0	45,3	43,6
Outpatient care	20,3	23,7	42,8	44,8	43,7	43,2	44,2	45,3
Preventive activities	4,2	4,8	4,9	4,9	5,0	4,9	4,9	5,1
Anti-epidemiological activities	0,6	0,7	0,4	0,4	0,4	0,4	0,4	0,5
Other expenditures	2,9	2,4	5,5	4,2	4,1	5,5	5,2	5,5

Table 4.10

Breakdown of state healthcare expenditures (%)*

Operational costs (total – 100%)	1998	2000	2001	2002	2003	2004	2005**
Wages including taxes and dues	52,8	58,5	58,0	61,3	61,7	60,0	65,4
Purchasing medications	10,4	9,9	9,97	9,4	8,9	8,3	8,7
Hospital board	8,8	8,4	9,3	9,2	8,2	7,5	6,1
Other expenditures	15,8	15,1	14,97	14,05	15,3	15,1	13,5
Purchasing equipment	6,4	0,4	0,2	0,15	0,4	4,3	3,3
Purchasing soft inventory		1,1	3,0	3,0	2,3	0,1	0,3
Major renovation		3,1	4,7	3,96	2,9	3,2	2,7

*Estimates based on Ministry of Finance, ** Ministry of Health

Table 4.11

Healthcare expenditures in the Republic of Uzbekistan in 1998-2005 (%)

	1998	2000	2001	2002	2003	2005
Total healthcare expenditures as % of GDP	3,5	3,5	3,5	3,4	3,4	3,1
Government expenditures as: % of total government expenditures	8,9	8,7	9,6	9,4	9,6	10,6
Government expenditures as: % of GDP	2,9	2,5	2,5	2,4	2,3	2,3

Source: State Statistics Committee data

Box 4.14

Recommendations to improve the health care financing system:

- Approve and implement a major package of medical services with an approved list of vital drugs and medical service products at all stages;
- Balance the availability and composition of guaranteed medical assistance and budget appropriations essential for guaranteed medical assistance;
- Complete the transition to a new system of government budget financing of the areas – per capita financing in primary health care, and number of treated cases for inpatient care – making adjustments for demographic indicators, age composition, public morbidity, climatic and geographic features by area, to meet the prerequisites for orientation towards end objectives of public health and the search for new effective alternatives for the use of existing resources;
- Shift financial resources away from specialized services to preventive measures and foster a healthy lifestyle as well as primary health care;
- In order safeguard constitutional rights of the people to health care and medical assistance, prohibit fees for services at institutions providing free-of-charge medical assistance (restructure health care institutions by separating institutions providing free-of-charge medical assistance from others); and
- Transition to the National System of Healthcare Accounts nationwide to facilitate oversight and promote integrity of funding sources and their use.

get expenditures in the health care sector changed. Additional incentives for health care workers meeting comprehensive public needs and an increase in health care workers' wages by a factor of 1.3 on average are envisioned in 2006.

Along with budget and private sources of health care financing, MFI funds started playing a high-profile role. In 1998-2005 the national health care system alone received USD 84.66 million, including USD 55 million in loans by repaying it from budget appropriations and USD 29.6 in grants. These funds were earmarked to equip medical institutions, implement tuberculosis programmes, reform rural primary health care in five provinces, and improve training of general practice health care staff.

Health care financing issues. The main problems in health care financing are a lack of funds and the inefficient use of funds that are available. Budget funds are not allocated based on the number of people, and on the quantity and quality of services provided but instead on the base level of funds allocated previously.

These flaws lead to the following:

- The majority of health care institutions in the region are under funded to meet their needs, which leads to decreased access to medical services of lower quality. There are regional differences in per capita health care expenditures. For instance, per capita health care expenditures in Syrdarya and Navoi provinces and Tashkent-city are highest, compared with lower expenditures in Samarkand, Andijan, and Kashkadarya provinces. The number of hospitals beds, outpatient institutions, and doctor visits are also lower in these provinces;
- Substantial amounts of the funds disbursed are earmarked for payment of wages of healthcare workers and auxiliary expenses, while expendi-

tures for purchasing medications and equipment decrease each year;

- The technical infrastructure of health care institutions, the availability of modern equipment, special vehicles, communications equipment, modern information technology for use in treatment and diagnosis, and computer equipment are substandard;
- 80% of the 100,000 units of medical equipment and vehicles of treatment and prevention institutions have depreciated, 3% are in need of repair, and 2% need to be written off. The largest amount of equipment in need of renovation and upgrade is at medical institutions in Samarkand, Andijan, Namangan, and Jizzakh;
- Many buildings of health care institutions are in need of renovation, better cold and hot water supply and telephone lines. According to State Statistics Committee data, 1.5% of hospital and independent clinic buildings are in need of urgent attention, more than 20% of hospital buildings and 14% of independent outpatient institutions are in need of maintenance. The greatest number of health care institutions in need of technical upgrade are located in Kashkadarya and Jizzakh provinces and in the Republic of Karakalpakstan.

The health care system's inadequate and ineffective finance mechanism has deteriorated due to the low income of the population of which a significant share cannot afford medical treatment at commercial health institutions or at mixed funding institutions. Surgical interventions, diagnostic examinations, and medications are prohibitively expensive for such people.

4.3 Enhance the quality of medical assistance

Public health improvement is not feasible without radical improvements in the quality of health services. Public survey findings were cited in previous sections, often with cases of public dissatisfaction with the quality of treatment and health services.

Introduction and implementation of the concept of quality improvement can be a powerful strategy for reforming a public health care system and requires gradual adaptation of the system to new socioeconomic conditions, new technologies, and scientific knowledge. This, in turn, requires a thorough study of the health care system's many components and of their impact on the quality of health services. Analyzing the health care system's existing mechanisms is important in that it facilitates improvement of the quality of medical assistance and operations of any health care facility.

Medical assistance quality improvement is a multidimensional task. Resolution of this task depends significantly on:

- Competency of specialists;
- Use of scientific advances in providing health services;
- Use of modern equipment, devices and tools utilized in the course of treatment;
- Availability of effective medications and regimes for their use; and
- Effective IT system support.

Quality assurance depends on the skills to medical assistance resources and technologies to sustainably improve the health.

Limited resources are not a barrier to developing and applying quality management methodology; if anything, quality management methodology should push the health sector.

Ensuring high quality health services means increasing their productivity. An important tool in this regard is the quality assessment system. Public health indicators are the basis for planning health care resources essential to meet current needs of the public for various types of health services.

There is an active multi-tier system of public health monitoring in Uzbekistan, which in general meets international standards. There is an adequate legislative and regulatory framework to track public health trends. Flaws in the current system for collecting and processing medical information include: voluminous but unreliable statistical data, weak analytical capacity,

Box 4.15

WHO and the quality of health services

The World Health Organization identified in 1991 the following tasks for quality assurance of the medical assistance system:

- Every patient should receive the set of diagnostic and therapeutic assistance with optimal results for health;
- Medical assistance should be consistent with medical science standards and with biological factors such as age, disease, and reaction to a selected treatment;
- Results should be achieved while minimizing expenditures;
- The patient should gain maximum satisfaction from the medical intervention;
- The patient's interaction with the medical assistance system and the results of the intervention should be the best possible.

organizational fragmentation, frequent duplication, and insufficient automation of data collection and processing.

Meanwhile, quality control of medical assistance in Uzbekistan is conducted primarily internally. Oversight functions and management decisions are made within a strict but quite ineffective system of internal guidelines, recommendations, and directivities.

The main factors undermining the quality of medical assistance in the country are:

- Insufficiently effective organization and management of the health care system;
- Inadequate budgetary funding for the health care system;
- Inadequate professional competence of health workers in some fields;
- Insufficient incentives for health care workers to provide quality services;
- Limited access of health workers to resources and information needed to deliver quality professional services;
- Lack of a coordinated system for protection of patients' rights as well as limited access of patients to resources and information about their rights; and
- Lack of incentives for health care institutions to improve the quality of health services.

Health care system organization and management. Implementation of the Government's health care reform programme requires a significant restructuring of the health care system in order to improve the quality of its services and public health in general.

Introduction of general practice (GP) was a priority health care reform. Transition to a GP system is

necessary for efficient and effective forms of medical assistance and to make integrated case management a reality. Meanwhile, the number of general practitioners makes up only 6.3% of the total number of doctors involved in health care.

Performance review of treatment institutions indicates the existence of flaws in the organization of outpatient and inpatient institutions. First of all, non-hospital medical assistance is not a priority and does not play a key role, leading to inefficiencies throughout the entire health care system. This misplaced priority on inpatient facilities because of the mistaken belief that essential diagnosis and treatment can be provided only at inpatient facilities needs to be corrected.

There is a need for a serious overhaul of inpatient institutions. In order to avoid fragmentation of diagnostic units and auxiliary services of central and district hospitals, putting all units, including central and district clinics under one roof, should be seriously contemplated. It is also necessary to consolidate obstetrics services. Another problem in health care sector is the inadequate number of inpatient institutions.

Professional competency of health workers. Any reform designed to improve the quality of medical assistance must involve improvement of the professional competence of medical personnel.

The low and even declining skills of the majority of doctors and service staff are cause for concern. Of the total number of doctors only 17.8% have earned a higher professional competency category, with 30.4% having achieved category I competency, and 3% category II category. It is an alarming fact that 25% of the country's doctors go 10 years or longer without updating their skills and training.

There is a significant differentiation among doctors in terms of their qualifications: most qualified doctors are concentrated in specialized clinics in Tashkent-city with a few in clinics in provincial centers and at emergency medical assistance posts. Yet even at such clinics, the number of highly qualified doctors is very small. In the majority of other medical institutions, the skills of their medical personnel do not meet modern requirements and as a result many errors are made in treating patients.

Even in the better equipped and more costly private health sector high quality health care is not always a given.

Medical universities and postgraduate educational institutions are among the main sources of professional knowledge and skills. In order to enhance the quality of medical student training and establish an effective system of medical education and postgraduate training at the national universities, these are the

key requirements:

Curricula should be amended to meet the needs and requirements of primary health care (family medical practice);

A system of continuously updated information based on scientific data (recommended for evidence-based medicine);

A system for continuing education of specialists should be developed;

Educational methods using the principles of adult education and multi-factor knowledge assessment;

Acquaint students and specialists with the concepts and methods used in evidence-based medicine (critical assessment of information, design of clinical research, statistics);

There are many other problems related to the quality of teaching and teaching methods, teacher qualifications, availability of textbooks and multimedia materials in languages the students know, limited access to modern international health-related information through medical periodicals and the Internet.

However, it would be inappropriate to place all the responsibility for professional competency of specialists solely on educational institutions. Just as much depends on the specialists themselves and on their interest in improving the quality of the services they provide and another part of the responsibility rests with the availability of proper licensing standards (permits to practice medicine) and certification (recognition of competency) for doctors and other health care workers.

Incentives for health workers to provide quality services. Taking into account the new health care performance assessment model, it must be noted that health workers, like other specialists, are constantly in need of incentives to motivate them to perform their work. It is essential that all performance incentives are clearly understood by every specialist in the primary care tier. The following actions are among those that must be taken to establish such a system:

- improve the code of ethical norms and increase the role of professional associations (of general practitioners) in applying the system;
- Set up a compensation plan for health workers corresponding to the social significance of health care;
- Increase the responsibility of health workers for the quality of the health services they provide;
- Make additional incentives (plots of land, long term interest-free loans for construction of housing, travel expenses, utility fees, welfare and benefits etc.) available to health workers in remote rural

areas; and

- Apply modern management methods to create an objective incentives system consisting of competitive recruitment, incentives for specialists providing quality medical assistance, and clearly delineated duties for staff jobs.

Access of health workers to resources and information needed to perform professional duties meeting high performance standards. Health workers should have adequate access to modern medical information and data. In order to provide access to information and its accurate assessment, the following steps are recommended:

- Develop a system to supply medical periodicals to health institutions;
- Set up an electronic database of national clinical guidelines and protocols for primary health care in different sectors;
- Set up and regularly update a database of effective clinical interventions and diagnostic procedures;
- Develop a reference collection of books on medications and their uses;
- Train specialists to perform information searches for scientific data and train them to perform critical assessment of the data; and
- Set up information centers at central district hospitals with Internet access and research databases and databases related to organizational activities.

The Republican Center for Evidence-Based Medicine under the Tashkent Institute for Training Physicians fulfills a special function as an information center that provides reliable scientific information to specialists via the Internet, provides printed products (clinical guidelines, protocols) and provides training courses.

Access should be provided to scientific information, to organizational information, to statistical data, and to information on available vacancies and grants (national and international).

Activities aimed at improving the quality of health care services. Developing research-based standards (guidelines, protocols) and monitoring promote improvements in the quality of health care services. Guidelines and protocols can provide quality indicators for medical assistance (structures, process, background), and for conducting audits (monitoring). Monitoring (auditing) the quality of health care services entails the following:

- Develop standards of effective primary health care services (based on national clinical guidelines and protocols);
- Implement developed standards of assistance to the existing clinical practice (dissemination of

clinical guidelines and protocols)

- Assess changes made in delivery of services (survey patients and medical staff, review outpatient histories and statistical data);
- Compare data received with selected quality standards of medical assistance; and
- Draw up an action plan improve the quality of health care services.

It should be emphasize that monitoring is an ongoing process and fits squarely into the health services quality improvement model. A monitoring system should make regular use of supplementary information collected at various levels (district, provincial, and republican) on the quality of health services. It should assist the stakeholders in coordinating their activities for improving quality by focusing efforts on health workers and institutions.

The purpose of the Republican Health Care Services Quality Control Working Group, established under the Ministry of Health and made up of health care management specialists, economists, lawyers, statisticians, epidemiologists and clinical specialists, is to introduce health care services quality improvement mechanisms. Similar working groups have been set up in provincial and district health care departments to resolve health care services quality issues on the local level. Criteria, licensing standards, certification and accreditation are reviewed for conformity with the content of medical assistance in primary health care.

Improving the quality of health services requires across-the-board cooperation with mandatory participation of potential consumers of health services (patients), stakeholder ministries and agencies, non-governmental professional organizations, local self-governance bodies as well as media representatives Hence, preventive health care, the healthy life-style concept, and improvements in the quality of health care services constitute the strategic triad for developing a health care system designed to improve public health in Uzbekistan in the 21st century.

LEGISLATIVE BASIS OF THE SYSTEM OF HEALTH CARE

List of laws of the Republic of Uzbekistan on Health Care

1. Constitution of the Republic of Uzbekistan, clause 40
2. Law of the Republic of Uzbekistan of 29.08.1996 No 265-I "On Health Care of Citizens"
3. Law of the Republic of Uzbekistan of 03.07.1992 No 657-XII "On the Public Sanitary Surveillance"
4. Law of the Republic of Uzbekistan of 09.12.1992 No 753-XII "On compulsory treatment of patients with chronic alcohol or drug addiction"
5. Law of the Republic of Uzbekistan of 19.08.1999 No 813-I "On narcotic drugs and psychotropic substances"
6. Law of the Republic of Uzbekistan of 25.04.1997 No 415-I "On medicines and pharmaceutical activity"
7. Law of the Republic of Uzbekistan of 31.08.2000 No 123-II "On mental health care"
8. Law of the Republic of Uzbekistan of 11.05.2001 No 215-II "On protection of population against tuberculosis"
9. Law of the Republic of Uzbekistan of 19.08.1999 No 816-I "On prevention of disease caused by human immunodeficiency virus (HIV)"
10. Law of the Republic of Uzbekistan of 30.08.2002 No 402-II "On donating blood and its components"
11. Law of the Republic of Uzbekistan of 30.08.1997 "On quality and safety of foodstuffs"

Decrees and Ordinances of the President of the Republic of Uzbekistan

1. Ordinance of the President of the Republic of Uzbekistan of 23.01.2006 No PP-266 "On "The Year of Philanthropy and Health Providers" Programme"
2. Ordinance of the President of the Republic of Uzbekistan of 01.12.2005 No PP-229 "On improvement of the system of remuneration of labour of health providers"
3. Decree of the President of the Republic of Uzbekistan of 19.07.2005 No UP-3629 "On foundation of the Tashkent Medical Academy"
4. Decree of the President of the Republic of Uzbekistan of 26.02.2003 No UP-3214 "On measures to reform further the system of health care"
5. Decree of the President of the Republic of Uzbekistan of 10.11.1998 No UP-2107 "On the State Programme on reforming the health care system of the Republic of Uzbekistan"
6. Decree of the President of the Republic of Uzbekistan of 02.03.1998 No UP-1933 "On stricter liability for infringement of sanitary legislation"
7. Decree of the President of the Republic of Uzbekistan of 14.07.1994 No UP-916 "On regulating medicines sale in the country"
8. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 25.01.2005 No 30 "On State Programme "The Year of Health"
9. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 21.12.2005 No 276 "On approving the improved system of remuneration of labour of health providers"
10. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 28.09.2005 No 217 "On measures to further reform the system of financing and managing health care institutions in the Republic of Uzbekistan"
11. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 08.06.2004 No 264 "On measures to complete the experiment and extend reforms in the health care system"
12. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 23.04.2004 No 195 "On measures to further develop the Public System "Mother and Child Screening"
13. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 25.08.2003 No 365 "On approval of the Statute on medical examination of people who want to get married"

14. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 05.07.2002 No 242 "On measures to follow the priority course of fostering health care culture in family, improving women health, birth and upbringing healthy generation"
15. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 25.01.2002 No 32 "On additional measures to improve health of women and young generation"
16. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 21.02.2002 No 63 "On measures to improve logistics of the first aid service"
17. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 30.03.2000 No 118 "On measures to improve scientific and technical capacity of the health care system of Uzbekistan"
18. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 15.02.2000 No 46 " On the State Programme " Healthy Generation"
19. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 24.08.1999 No 401 "On expanding the network of specialized curative and preventive institutions to treat patients with chronic alcohol or drug addiction"
20. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 21.12.1999 No 538 "On measures to further expand the range and amount of production of medicines and other medical goods in Uzbekistan"
21. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 14.01.1999 No 18 "On improving management of the health care system in the Republic of Uzbekistan"
22. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 01.04.1998 No 140 "On establishment of the State System of early identification of congenital and other pathology in newborns and pregnant women to prevent birth of the handicapped from childhood - the Mother and Child Screening"
23. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 12.11.1998 No 473 "On measures to improve health care services in Andizhan and Fergana provinces"
24. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 08.04.1998 No 147 "On measures to make the State Sanitary Surveillance more efficient"
25. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 20.02.1997 r. No 96 "On approval of the list of diseases dangerous for the people around"
26. Ordinance the Cabinet of Ministers of the Republic of Uzbekistan of 20.03.1997 No 153 "On approval of the list of diseases of social importance and granting benefits to the patients suffering from them"
27. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 06.08.1997 No 390 "On measures to improve mental health care of population"
28. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 02.12.1997 No 532 "On improvement of the system of financing curative and preventive institutions"
29. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 31.12.1997 No 583 "On measures to improve the neurosurgical services in Uzbekistan"
30. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 14.08.1996 No 283 "On public support to development of medical and pharmaceutical industry in the Republic of Uzbekistan"
31. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 22.02.1996 No 71 "On establishment of the system of medical and social patronage"
32. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 25.05.1995 No 181 " On the public control over the quality of medicines, medical goods and foodstuffs for preventive and curative feeding"
33. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 22.11.1994 No 562 "On measures to provide children with vaccines"
34. Ordinance of the Cabinet of Ministers of the Republic of Uzbekistan of 06.08.1994 No 404 " On urgent measures to improve provision with and distribution of medicines and medical goods in Uzbekistan"

STATISTICAL TABLES

Table 1

Human development index

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Life expectancy at birth (years)	69,1	69,2	70,1	69,9	71,1	70,8	71,3	71,2	71,6	72,5
Adult literacy rate (%)	98,96	99,06	99,13	99,15	99,16	99,17	99,18	99,19	99,20	99,31
Mean years of schooling (years)	11,4	11,4	11,4	11,4	11,4	11,4	11,5	11,6	11,6	11,7
Literacy index	0,990	0,991	0,991	0,992	0,992	0,992	0,992	0,992	0,992	0,993
Schooling index	0,76	0,76	0,76	0,76	0,76	0,76	0,77	0,77	0,77	0,77
Educational attainment	2,74	2,74	2,74	2,74	2,74	2,74	2,74	2,74	2,76	2,75
Real GDP per capita (\$ PPP)*	1973	2004	2105	2188	2301	2422	2460	2578,5	2668,1	2834,8
Life expectancy index	0,735	0,737	0,752	0,748	0,768	0,763	0,772	0,770	0,777	0,792
Index of achieved level of education	0,913	0,913	0,913	0,913	0,913	0,913	0,913	0,913	0,917	0,917
GDP index	0,498	0,500	0,508	0,515	0,523	0,532	0,535	0,542	0,548	0,558
The gender empowerment measure (GEM)	0,715	0,717	0,724	0,725	0,735	0,736	0,740	0,742	0,747	0,756
Human development index (HDI)	0,704	0,705	0,714	0,717	0,727	0,733	0,736	0,738	0,743	0,752
GDP per capita rank minus HDI rank	0,351	0,368	0,371	0,364	0,373	0,382	0,378	0,380	0,411	0,468
HDI rank	104	-	92	106	-	-	101	107 ^{xx)}	-	

^{xx)} From 1995 to 2000 — information updated using by purchasing power parity of national currency (Human development in Kazakhstan, Almaty 2001, page 92); for 2001—Report on Human Development for 2003, page 238; for 2002–2003—our calculations

Table 2

Humanitarian development

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Scientists and technicians (per 10,000 people)	12,3	12,2	11,0	11,0	11,0	11,2	10,9	11,3	10,9	10,7
Enrolment in education (% age 7–22)	76,0	76,0	76,0	76,0	76,0	76,0	76,7	77,3	77,3	76,5
Enrolment in tertiary education per 1,000 people	8,4	7,1	6,7	6,6	6,8	7,4	8,2	9,1	9,9	10,1
as % of constant population	0,8	0,7	0,7	0,7	0,7	0,7	0,8	0,9	1,0	1,0
Female enrolment as % of constant population	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,4	0,4	0,4
Daily newspapers (copies per 100 people)	7	6	7	7	8	7	8	9	8	8
Television sets (per 1,000 people)	103	91	84	73	61	50	39	34	33	33
Radio sets (per 1,000 people)	122	106	94	81	65	53	43	39	39	39

Table 3

Profile of human distress

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Unemployment rate (%)	0,3	0,3	0,3	0,4	0,4	0,4	0,4	0,4	0,3	0,4
Injures from road accidents (per 100,000 people):										
died	8,4	8,6	8,8	8,6	8,6	8,6	8,6	8,2	8,0	7,8
injured	50,3	48,9	48,2	48,7	48,9	47,4	47,3	45,2	44,5	44,2
Sulphur and nitrogen emissions (NO ₂ and SO ₂ per capita, kg)	21,0	20,6	20,3	18,2	18,2	16,7	14,3	14,0	13,1	12,4
Reported crimes (per 10,000 people)	29,4	28,4	28,3	28,7	30,9	29,9	29,7	30,4	31,2	30,5
including:										
intentional murder and attempted murder	0,5	0,5	0,5	0,4	0,4	0,4	0,4	0,4	0,4	0,4
intentional grievous bodily injury	0,4	0,4	0,4	0,3	0,3	0,3	0,4	0,5	0,4	0,5
intentional homicides by men (per 100,000 people)	3,5	3,7	3,0	3,2	3,1	3,0	2,8	3,4	3,0	2,6
reported rapes (per 100,000 people)	2,5	2,6	2,1	2,2	2,3	1,7	1,9	1,9	2,1	1,8

Table 4

Human development financing

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total expenditure on education (as % of GDP)	7,2	7,4	6,8	6,9	7,1	7,1	7,0	6,8	6,8	6,4
Total expenditure on health (as % of GDP)	4,1	4,4	3,9	3,5	3,6	3,5	3,5	3,4	3,4	3,1
Real GDP per capita (\$PPP)*	1973	2004	2105	2188	2301	2422	2460	2578,5	2668,1	2834,8
State expenditure on education (as % of GDP)	7,4	7,7	7,3	7,4	7,5	6,7	6,8	6,7	6,3	-
State expenditure on health (as % of GDP)	3,6	3,5	3,1	2,9	2,8	2,5	2,5	2,4	2,3	-

* From 1995 to 2000 — information updated using by purchasing power parity of national currency (Human development in Kazakhstan, Almaty 2001, page 92); for 2001—Report on Human Development for 2003, page 238; for 2002–2003—our calculations.

Table 5

Gender gaps (females as percentage of males)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Life expectancy	108,0	108,1	107,6	107,1	107,1	107,0	106,8	106,7	106,3	106,3
Population	101,4	101,3	101,1	101,0	100,8	100,7	100,6	100,5	100,3	100,3
Schooling	92,4	91,7	90,9	90,2	90,2	95,7	95,7	95,8	95,8	95,8
Secondary school enrolment	91,2	87,2	78,7	96,6	91,2	93,6	87,9	87,7	86,1	90,3
Secondary school graduates	90,1	85,9	87,0	87,2	91,6	94,0	85,7	82,5	93,2	90,3
Full-time enrolment in tertiary education	96,1	95,4	96,6	96,5	95,6	95,3	94,3	93,9	93,1	92,9
Tertiary school graduates	63,7	65,0	61,0	61,6	63,7	64,2	55,3	59,5	66,8	68,6
Women in labor force	74,7	77,8	78,7	79,1	79,2	78,9	78,7	78,6	78,6	78,6
Unemployment	2t.	2,5t.	1,9t.	2,2t.	2,6t.	2,1t.	1,8t.	2t.	1,7t.	2t.
Gender-related development index*	0.704	0.705	0.714	0.717	0.727	0.733	0.736	0.738	0.743	-

* See in Definition of Statistical Terms.

Note: Here in the table and after «t.» means «times».

Table 6

Status of women

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Life expectancy at birth	71,7	71,9	72,6	72,3	73,5	73,2	73,6	73,5	73,8	74,7
Average age at first marriage (years)	20,2	20,6	21,4	21,0	21,0	21,4	21,5	21,6	21,8	22,1
Maternal mortality rate (per 100,000 live birth)	32,2	20,7	28,5	28,6	31,2	33,1	34,1	32,0	32,2	30,2
Secondary school enrolment (as % of total)	43,0	46,5	49,7	49,1	47,7	48,3	46,8	46,7	47,1	47,0
Secondary school graduates (as % of women in total secondary school graduates)	47,6	46,2	46,5	49,3	49,7	48,4	46,2	45,2	48,3	47,5
Full-time enrolment in tertiary education (as % of total)	41,9	42,8	41,0	37,1	38,6	38,9	39,6	39,7	38,8	40,5
Women in labor force (as % of total)	42,8	43,8	44,0	44,2	44,2	44,1	44,0	44,0	44,0	44,0

Table 7

Urban and rural demographic profiles

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Population (millions) at the end of the year										
total	22,9	23,4	23,8	24,1	24,5	24,8	25,1	25,4	25,7	26,0
urban	8,8	8,9	9,0	9,1	9,2	9,2	9,3	9,3	9,4	9,4
rural	14,1	14,5	14,8	15,0	15,3	15,6	15,8	16,1	16,3	16,6
Annual population growth rate (%)										
total	2,0	1,9	1,8	1,5	1,5	1,3	1,2	1,2	1,1	1,2
urban	1,1	1,3	1,3	1,0	0,9	0,7	0,7	0,6	0,4	0,6
rural	2,5	2,3	2,1	1,8	1,8	1,7	1,5	1,6	1,5	1,6
Average family size										
total	5,4	5,4	5,5	5,6	5,5	5,4	5,3	5,1	5,1	5,1
urban	5,2	5,0	4,7	4,7	4,6	4,6	4,6	4,4	4,5	4,5
rural	5,6	5,9	6,0	6,1	6,1	6,0	5,9	5,8	5,5	5,6
Contraceptive prevalence rate (%)	38,2	42,7	45,1	57,8	56,1	58,5	55,0	56,4	60,0	61,8
Population elder working age (%)										
total	7,6	7,6	7,6	7,6	7,6	7,3	7,2	7,2	7,1	7,0
urban	9,5	9,4	9,4	9,4	9,2	9,0	9,0	8,9	8,9	8,8
rural	6,5	6,5	6,5	6,5	6,4	6,3	6,2	6,2	6,1	6,0
Life expectancy at age 60–64										
total	17,0	17,0	17,5	17,1	17,8	17,3	17,6	17,1	17,2	17,9
urban	16,7	16,6	17,1	17,1	17,6	17,2	17,5	17,0	17,3	18,1
rural	17,3	17,3	17,8	17,1	17,9	17,3	17,6	17,3	17,2	17,8
women										
total	18,2	18,1	18,6	18,1	18,9	18,3	18,6	18,3	18,3	19,1
urban	18,4	18,2	18,7	18,5	19,1	18,7	19,0	18,6	19,0	19,7
rural	18,1	18,2	18,6	17,7	18,7	18,0	18,3	18,0	17,8	18,5
men										
total	15,5	15,5	16,1	15,8	16,4	16,0	16,3	15,9	16,0	16,7
urban	14,5	14,6	15,1	15,2	15,6	15,3	15,6	15,1	15,3	16,2
rural	16,3	16,3	16,9	16,2	17,1	16,5	16,8	16,5	16,5	17,1

Table 8
Urbanization

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Urban population at the end of the year (as % of total)	38,3	38,0	37,8	37,6	37,4	37,2	37,0	36,7	36,5	36,3
Annual growth rate of urban population (% for 5 year period)	1,1	1,0	1,1	1,1	1,1	1,1	0,9	0,8	0,6	0,6
Population in cities of more than 1 million as % of:										
total population	9,1	9,0	8,9	8,9	8,7	8,6	8,5	8,4	8,3	8,2
urban population	23,9	23,8	23,6	23,6	23,4	23,2	23,0	22,9	22,8	22,6
Population of biggest cities (cities of more than 100000 and over) as percentage of:										
total population	22,3	22,1	21,9	21,8	21,6	20,1	21,2	21,0	20,9	20,9
urban population	58,3	58,1	57,9	57,9	57,8	54,0	57,4	57,3	57,3	57,7

Table 9
Medicine and health care

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Death from circulatory diseases (as % of all cases)										
total	46,5	46,7	47,2	50,0	50,6	52,6	53,4	54,8	54,7	54,6
urban	50,3	50,0	51,0	52,7	53,4	54,8	54,9	56,1	55,8	54,9
rural	43,5	44,0	44,2	47,8	48,4	50,8	52,1	53,8	53,8	54,4
Death from malignant tumor (as % of all cases)										
total	6,9	6,8	6,8	6,8	7,3	7,1	7,1	6,9	7,0	7,3
urban	9,5	9,1	9,1	9,1	9,4	8,8	8,7	8,6	8,6	8,9
rural	4,8	4,9	4,9	4,9	5,6	5,6	5,7	5,5	5,7	6,0
Registered alcohol consumption (liters per capita)	0,7	0,8	0,6	1,2	1,0	1,3	1,4	1,4	1,2	1,1
Population per doctor	298	302	328	296	302	305	309	314	318	334
Number of hospital beds per 10,000 people	79,0	72,5	65,9	58,2	56,4	55,9	55,8	57,8	57,4	54,9
Number of hospital beds for pregnant women per 10,000 women	43,2	47,7	47,0	45,3	42,6	40,5	39,6	38,1	35,7	32,0
State expenditures on health (as of total state expenditures)	11,2	9,7	9,5	8,9	9,1	8,7	9,6	9,4	9,6	-
State expenditures on health (as % of GDP)	3,6	3,5	3,1	2,9	2,8	2,5	2,5	2,4	2,3	-
Total expenditures on health (as % of GDP)	4,1	4,4	3,9	3,5	3,6	3,5	3,5	3,4	3,4	3,1

Table 10

Education profile

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Enrolment of 6–23 years old (%)	76,0	76,0	76,0	76,0	76,0	76,0	76,7	77,3	77,3	76,5
Average years of schooling:	11,4	11,4	11,4	11,4	11,4	11,4	11,5	11,6	11,6	11,7
women	11,0	11,0	11,0	11,0	11,0	11,1	11,2	11,3	11,3	11,5
men	11,9	12,0	12,1	12,2	12,2	11,6	11,7	11,8	11,8	11,9
Secondary school graduates (Enrollment/Graduates %)	111,9	111,3	110,4	108,4	107,9	114,8	113,9	121,0	107,9	117,9
Secondary schools graduates (% of total school age population)	105,8	107,8	104,6	107,8	116,7	93,7	102,5	- ^{x)}	71,1	86,7
Secondary specialized school graduates (as % of school graduates, vocational and specialized school students)	44,0	43,6	43,9	41,5	41,9	41,4	42,9	- ^{x)}	43,3	37,1
19-years still in full-time education (%)	24,9	20,8	17,6	17,3	18,7	23,4	19,0	18,2	18,5	15,5 ^{xx)}
University equivalent full-time enrolment (% of all types of education)	85,8	86,4	85,1	84,2	84,8	91,2	89,4	84,0	78,5	91,4
University equivalent full-time graduates (as % of graduate age (22 years) population)	13,0	12,2	10,5	8,7	8,2	7,0	7,7	8,4	9,2	10,5
State expenditures on education (as % of GDP)	7,4	7,7	7,3	7,4	7,5	6,7	6,8	6,7	6,3	-
State expenditures on education (as of total state expenditures)	22,8	21,1	22,6	22,3	24,2	23,2	25,5	26,0	26,2	-
State expenditures on tertiary education (as % of expenditures on education)	8,6	8,3	5,4	7,0	6,6	7,0	6,8	6,7	6,5	-

* Comparable data not available due to changes in the school system, introduced as part of the education reform programme.

Table 11
Employment

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Labor force (as % of total population)										
total	37,4	37,1	37,0	36,9	36,7	36,6	36,7	37,1	37,6	38,5
urban	17,3	17,8	17,7	17,6	17,9	17,0	16,4	16,6	16,8	17,2
rural	20,1	19,3	19,3	19,3	18,8	19,6	20,3	20,5	20,8	21,3
Engaged (as % of total population):										
in agriculture and forestry										
total	41,2	40,9	40,7	39,4	36,2	34,4	33,5	32,6	31,9	30,7
urban	1,4	1,5	1,5	1,5	1,4	1,5	1,2	1,1	1,2	1,2
rural	39,8	39,4	39,2	37,9	34,8	32,9	32,3	31,5	30,7	29,5
in industry										
total	12,9	12,9	12,8	12,7	12,6	12,7	12,7	12,7	12,8	13,0
urban	11,4	11,5	11,4	11,3	11,3	10,7	10,2	10,2	10,3	10,4
rural	1,5	1,4	1,4	1,4	1,3	2,0	2,5	2,5	2,5	2,6
in services										
total	26,1	26,6	26,9	26,9	29,1	30,4	30,7	31,3	31,8	32,3
urban	18,8	19,9	20,2	20,1	20,4	18,5	18,5	18,7	18,9	19,1
rural	7,3	6,7	6,7	6,8	8,7	11,9	12,2	12,6	12,9	13,2
Future labor force replacement ratio (%)										
total	237	234	229	223	215	206	197	188	180	172
urban	189	186	183	179	173	166	159	152	146	141
rural	271	267	261	253	243	233	222	211	201	192
Percentage of employees unionized	100	100	100	100	100	100	100	100	100	100
Weekly working hours (per person in manufacturing)	40	40	40	40	40	40	40	40	40	40

Table 12

Unemployment

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Unemployed, having official status (thousand people)										
total	25,4	27,5	28,8	33,3	39,1	35,4	37,5	34,8	32,2	34,9
urban	10,3	12,1	8,5	11,4	14,3	14,0	11,5	11,9	9,5	9,3
rural	15,1	15,4	20,3	21,9	24,8	21,4	26,0	22,9	22,7	25,6
Unemployment rate, (%)										
total	0,3	0,3	0,3	0,4	0,4	0,4	0,4	0,4	0,3	0,4
urban	0,3	0,3	0,2	0,3	0,3	0,3	0,3	0,3	0,2	0,2
rural	0,3	0,3	0,4	0,5	0,5	0,4	0,5	0,4	0,4	0,5
Regional unemployment disparity (the bottom 25% of all regions compared to the top 25%)										
	11,2	7,0	9,4	9,8	8,0	5,7	5,7	5,2	7,5	8,5
Ratio between the number of unemployed and secondary and higher schools graduates										
	1,8	2,0	2,2	1,9	2,5	2,4	1,8	4,0	2,0	1,9
women	2,9	3,7	3,6	3,4	4,5	3,1	2,8	6,8	2,4	2,1
men	1,1	1,1	1,4	1,2	1,2	1,7	1,1	2,5	1,8	1,6
Incidence of long-term unemployed (as % of total)										
6–12 month	9,2	19,3	5,7	10,4	8,8	8,2	12,3	11,4	5,7	7,7
more than 12 months	4,9	3,3	2,2	2,8	3,5	3,1	1,6	3,0	2,9	2,4

Table 13

National income accounts

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total GDP (bln. soums)	302,8	559,1	976,8	1416,2	2128,7	3255,6	4925,3	7450,2	9844,0	12261,0
Agricultural production (as % of GDP)	28,1	22,4	28,3	26,8	29,0	30,1	30,0	30,1	28,4	26,4
Industry (as % of GDP)	17,1	17,8	15,6	14,9	14,3	14,2	14,1	14,5	15,8	17,5
Services (as % of GDP)	34,4	36,8	36,2	36,2	36,3	37,0	38,0	37,7	37,2	37,0
Private consumption (as % of GDP)	50,6	55,2	60,8	59,6	62,1	61,9	61,5	60,2	55,6	51,9
Public consumption (as % of GDP)	22,3	22,1	20,5	20,5	20,6	18,7	18,5	18,0	17,4	16,2
Gross domestic investments (as % of GDP)	24,2	23,0	18,9	20,9	17,1	19,6	21,1	21,2	20,8	24,5
Gross domestic savings (as % of GDP)	27,1	22,7	18,7	19,9	17,3	19,4	20,0	21,8	27,0	31,9
Tax revenues (as % of GDP)	27,3	27,7	26,0	27,9	25,9	23,3	21,0	22,5	22,1	-
Government spending (as % of GDP)	32,6	36,4	32,5	33,0	31,0	29,0	26,7	25,8	24,1	-
Exports (as % of GDP)	31,2	32,6	29,8	23,7	18,7	24,0	29,9	31,2	36,9	40,7
Imports (as % of GDP)	28,3	33,0	30,1	22,0	18,3	21,4	27,1	28,1	29,3	32,0

Table 14

Natural resources balance sheet

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Population density (people per sq. km, at the end of the year)	51,4	52,4	53,4	54,0	54,8	55,5	56,2	56,9	57,5	58,2
Cultivated land (as % of land area)	9,2	9,2	9,2	9,2	9,1	9,1	9,1	9,1	9,1	9,1
Forested and wooded land (as % of land area)	2,8	3,0	3,0	3,2	3,2	3,1	3,1	5,1	6,1	6,1
Irrigated land (as % of arable area)	81,6	81,6	81,5	81,4	81,6	81,6	81,6	81,6	81,6	81,5

Table 15

Trends of economic performance

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GDP annual growth rate (%)	-0,9	1,7	5,2	4,3	4,3	3,8	4,2	4,0	4,2	7,4
GDP per capita annual growth (%)	-2,7	-0,2	3,3	2,6	2,8	2,4	2,9	2,7	3,0	6,2
Tax revenues (as % of GDP)	27,3	27,7	26,0	27,9	25,9	23,3	21,0	22,5	22,1	-
Direct taxes (as % of total taxes)	42,0	44,7	43,2	35,2	34,7	33,4	34,9	30,1	28,4	-
Budget deficit (as % of GDP)	2,7	1,9	0,7	0,5	0,6	0,7	0,3	0,2	0,4	-
Exports (as % of GDP)	31,2	32,6	29,8	23,7	18,7	24,0	29,9	31,2	36,9	40,7

Table 16

Communications profile

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Television sets (per 1,000 people)	103	91	84	73	61	50	39	34	33	33
Cinema attendance (per capita)	0,3	0,2	0,2	0,1	0,1	0,1	0,1	0,1	0,1	-
Daily newspapers (copies per 100 people)	7	6	7	7	8	7	8	9	8	8
Book titles published (per 100,000 people)	5,2	4,3	4,8	4,1	3,6	4,2	4,3	3,8	3,5	3,7
Private cars (per 100 people)	3,5	3,4	3,5	3,7	3,8	3,9	4,0	4,0	4,0	6,0
Telephones (per 100 people), units	6,7	6,5	6,4	6,3	6,4	6,5	6,5	6,5	6,5	6,6
Telephones (per 100 rural dwellers), units	2,2	2,0	1,9	1,8	1,7	1,7	1,6	1,6	1,6	1,6
Parcels, letters (per 100 people)	0,1	0,2	0,2	0,2	0,2	0,3	0,4	0,2	0,2	0,2
Long distance calls (per capita)	2,5	2,5	3,1	3,3	4,1	5,2	5,7	6,5	7,0	7,7
Letters mailed (per capita)	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,5	0,6

Table 17

Rural-urban gaps

	1997			1998			1999		
	total	urban	rural	total	urban	rural	total	urban	rural
Life expectancy at birth (years)	70,1	69,6	70,7	69,9	69,9	70,1	71,1	70,6	71,6
Mean years of schooling	11,4	13,9	9,9	11,4	13,9	9,8	11,4	14,0	9,2
Literacy rate	99,1	99,7	98,7	99,2	99,7	98,8	99,2	99,7	98,8
Literacy index	0,991	0,997	0,987	0,992	0,997	0,988	0,992	0,997	0,988
Education level	2,74	2,92	2,63	2,74	2,92	2,63	2,74	2,88	2,59
Gross first, second and third level enrolment ratio	70,6	80,4	65,7	70,6	80,4	65,7	70,6	80,4	65,7
Education attainment index	0,913	0,973	0,877	0,913	0,973	0,877	0,913	0,960	0,863
Real GDP per capita (PPP\$)	2105	-	-	2188	-	-	2301	-	-
Life expectancy index	0,752	0,775	0,738	0,748	0,776	0,743	0,768	0,778	0,742

Continuation of table 17

Rural-urban gaps

	2000			2001			2002		
	total	urban	rural	total	urban	rural	total	urban	rural
Life expectancy at birth (years)	70,8	70,2	71,2	71,3	70,7	71,7	71,2	70,5	71,7
Mean years of schooling	11,4	11,8	11,0	11,5	11,8	11,2	11,6	12,0	11,2
Literacy rate	99,2	99,7	98,8	99,2	99,7	98,8	99,2	99,7	98,8
Literacy index	0,992	0,997	0,988	0,992	0,997	0,988	0,992	0,997	0,988
Education level	2,74	2,82	2,70	2,74	2,83	2,70	2,74	2,83	2,70
Gross first, second and third level enrolment ratio	76,0	82,5	72,7	76,0	83,4	72,2	76,0	83,8	72,2
Education attainment index	0,913	0,940	0,901	0,913	0,943	0,899	0,913	0,944	0,899
Real GDP per capita (PPP\$)	2422	-	-	2460	-	-	2578,5	-	-
Life expectancy index	0,763	0,753	0,770	0,772	0,762	0,778	0,770	0,758	0,778

End of table 17

Rural-urban gaps

	2003			2004		
	total	urban	rural	total	urban	rural
Life expectancy at birth (years)	71,6	71,1	71,9	72,5	72,0	72,8
Mean years of schooling	11,6	12,0	11,3	11,7	12,1	11,5
Literacy rate	99,2	99,7	98,8	99,3	99,4	99,3
Literacy index	0,992	0,997	0,988	0,993	0,994	0,993
Education level	2,76	2,79	2,73	2,75	2,90	2,68
Gross first, second and third level enrolment ratio	77,3	80,0	75,3	76,5	91,1	69,4
Education attainment index	0,919	0,931	0,909	0,917	0,967	0,893
Real GDP per capita (PPP\$)	2668,1	-	-	2834,8	-	-
Life expectancy index	0,777	0,768	0,782	0,792	0,783	0,797

Table 18

Rural-urban gaps

(100=parity between urban and rural areas)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Population	160,2	162,1	163,7	165,0	166,4	168,1	169,7	171,3	173,1	174,8
Population growth rate	227,3	176,9	161,5	180,0	200,0	242,9	214,3	266,7	375,0	266,7
Life expectancy	101,3	101,9	101,6	100,3	101,4	101,4	101,4	101,7	101,1	101,1
Average family size	107,7	118,0	127,7	129,8	129,8	130,4	128,3	131,8	122,2	124,4
Labor force	115,5	108,9	109,0	109,0	104,9	115,6	123,8	123,5	123,5	123,9
Population elder than working age	111,1	112,4	113,5	114,5	116,2	117,4	118,2	119,4	120,0	120,1
Death from circulatory diseases	68,8	65,8	65,0	71,7	67,2	67,6	68,4	63,7	70,6	72,1
Death from malignant tumors	39,9	40,2	41,0	42,7	44,3	46,5	47,3	42,6	48,9	49,5
Life expectancy at age of 60–64	103,6	104,2	104,1	100,2	101,7	100,6	100,6	101,8	99,1	98,3
Employed as total employed (in urban and rural areas)	115,4	108,8	108,8	108,8	104,7	115,5	123,5	123,3	123,3	123,6
Unemployment rate	126,1	116,9	2p.	177,6	165,4	131,5	183,7	155,0	192,0	2,2p.
Provision of services to household:										
water supply	46,9	45,4	58,8	58,4	68,9	73,7	76,9	78,3	89,1	89,5
sewage service	10,6	9,0	9,0	8,6	8,7	8,9	8,4	8,1	9,0	9,1

Note: Rural average level as % of urban average level. The closer the figure is to 100, the lower is the distortion. Figures exceeding 100 indicate that the rural average level higher than the urban average level.

Table 19

GDP per capita by regions (Real GDP per capita)

	(\$ PPP)					As % of average				
	2000	2001	2002	2003	2004 *	2000	2001	2002	2003	2004 *
Republic of Uzbekistan **	2422,0	2460,0	2578,5	2668,1	2834,8	1,00	1,00	1,00	1,00	1,00
Nothern Uzbekistan	1627,6	1493,2	1490,6	1624,9	1573,3	0,672	0,607	0,578	0,609	0,555
Karakalpakstan	1324,8	1237,4	1214,5	1400,8	1270,0	0,547	0,503	0,471	0,525	0,448
Khorezm	1969,1	1781,0	1799,8	1870,3	1907,8	0,813	0,724	0,698	0,701	0,673
Central Uzbekistan	2206,4	2233,7	2333,5	2502,7	2477,6	0,911	0,908	0,905	0,938	0,874
Bukhara	2666,6	2666,6	2645,5	2830,9	3041,7	1,101	1,084	1,026	1,061	1,073
Djizzak	1552,5	1655,6	1805,0	2150,5	2131,8	0,641	0,673	0,700	0,806	0,752
Navoi	3419,9	3537,5	4177,2	4701,2	4844,7	1,412	1,438	1,620	1,762	1,709
Samarkand	1799,5	1768,7	1835,9	1825,0	1729,2	0,743	0,719	0,712	0,684	0,610
Syrdarya	2412,3	2509,2	2320,7	2521,4	2080,7	0,996	1,020	0,900	0,945	0,734
Southern Uzbekistan	1872,2	1968,0	2044,8	2668,9	1984,4	0,773	0,800	0,793	0,778	0,700
Kashkadarya	1981,2	2076,2	2158,2	2249,2	2140,3	0,818	0,844	0,837	0,843	0,755
Surkhandarya	1736,6	1830,2	1902,9	1859,7	1791,6	0,717	0,744	0,738	0,697	0,632
Eastern Uzbekistan	2487,4	2477,2	2485,7	2537,4	2639,2	1,027	1,007	0,964	0,951	0,931
Andijan	2019,9	2140,2	2114,4	2049,1	2114,8	0,834	0,870	0,820	0,768	0,746
Namangan	1625,2	1567,0	1598,7	1614,2	1513,8	0,671	0,637	0,620	0,605	0,534
Ferghana	2557,6	2273,0	2312,9	2233,2	2168,6	1,056	0,924	0,897	0,837	0,765
Tashkent	2724,8	2755,2	2820,9	2929,6	2970,9	1,125	1,120	1,094	1,098	1,048
Tashkent-city	3393,2	3601,4	3545,4	3884,6	4524,3	1,401	1,464	1,375	1,456	1,596

* Preliminary Estimates

** Including not distributed data by regions: Uzbek energy; Foreign trade; Branches, rendering state services in a joint character; Taxes for import, including VAT; Subsidies for products.

Addenda to main tables

1. Demography and Employment

Table 20

Human development index by region

	Life expectancy			Life expectancy index			GDP index				
	2002	2003	2004	2002	2003	2004	2000	2001	2002	2003	2004 ^{x)}
Republic of Uzbekistan	71,2	71,6	72,5	0,770	0,777	0,792	0,532	0,535	0,542	0,548	0,558
Republic of Karakalpakstan	68,2	69,3	70,3	0,720	0,738	0,755	0,431	0,420	0,417	0,440	0,424
Andijan region	71,3	71,5	72,4	0,772	0,775	0,790	0,502	0,511	0,509	0,504	0,509
Bukhara region	72,8	72,7	73,4	0,797	0,795	0,807	0,548	0,548	0,547	0,558	0,570
Djizzak region	73,6	74,3	75,9	0,810	0,822	0,833	0,541	0,547	0,429	0,512	0,511
Kashkadarya region	73,1	74,0	74,5	0,802	0,817	0,825	0,482	0,506	0,513	0,520	0,511
Navoi region	71,0	71,8	72,5	0,767	0,780	0,792	0,532	0,595	0,623	0,643	0,648
Namangan region	71,9	71,8	72,9	0,782	0,780	0,798	0,465	0,459	0,463	0,464	0,453
Samarkand region	71,2	71,9	72,5	0,770	0,782	0,792	0,482	0,480	0,486	0,485	0,476
Surkhandarya region	73,6	73,4	74,9	0,810	0,807	0,832	0,477	0,485	0,492	0,488	0,482
Syrdarya region	69,3	69,5	70,0	0,738	0,742	0,750	0,531	0,538	0,525	0,539	0,507
Tashkent region	70,2	70,5	71,0	0,753	0,758	0,767	0,551	0,553	0,557	0,564	0,566
Ferghana region	72,0	72,1	73,2	0,783	0,785	0,803	0,541	0,522	0,524	0,518	0,513
Khorezm region	71,4	71,3	72,4	0,773	0,772	0,790	0,497	0,481	0,482	0,537	0,536
Tashkent city	69,6	70,1	70,7	0,743	0,752	0,762	0,588	0,598	0,596	0,611	0,636

^{x)} Preliminary Estimates

End of table 20

Human development index by region

	Educational level					HDI				
	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
Republic of Uzbekistan	2,74	2,74	2,74	2,76	2,75	0,736	0,740	0,742	0,747	0,756
Republic of Karakalpakstan	2,73	2,74	2,73	2,73	2,71	0,690	0,684	0,682	0,696	0,694
Andijan region	2,74	2,74	2,74	2,75	2,75	0,727	0,732	0,731	0,732	0,739
Bukhara region	2,74	2,72	2,72	2,73	2,72	0,748	0,750	0,750	0,754	0,761
Djizzak region	2,75	2,72	2,72	2,72	2,70	0,755	0,754	0,715	0,747	0,748
Kashkadarya region	2,75	2,74	2,74	2,75	2,74	0,733	0,740	0,743	0,757	0,750
Navoi region	2,77	2,76	2,78	2,79	2,79	0,737	0,761	0,772	0,784	0,790
Namangan region	2,73	2,74	2,73	2,75	2,75	0,715	0,718	0,718	0,720	0,723
Samarkand region	2,75	2,75	2,74	2,75	2,74	0,720	0,722	0,723	0,728	0,727
Surkhandarya region	2,72	2,74	2,74	2,75	2,75	0,725	0,736	0,738	0,737	0,744
Syrdarya region	2,68	2,69	2,68	2,69	2,68	0,716	0,724	0,719	0,726	0,717
Tashkent region	2,68	2,68	2,68	2,68	2,68	0,732	0,733	0,734	0,738	0,742
Ferghana region	2,76	2,76	2,77	2,78	2,77	0,744	0,741	0,743	0,743	0,746
Khorezm region	2,75	2,75	2,74	2,76	2,76	0,724	0,723	0,723	0,743	0,749
Tashkent city	2,86	2,89	2,92	2,96	2,96	0,763	0,769	0,771	0,783	0,795

Table 21

Population density and rural population % by regions (at the beginning of year)

	2001		2002		2003	
	population density, people/km ²	Rural population, % of total	population density, people/km ²	Rural population, % of total	population density, people/km ²	Rural population, % of total
Republic of Uzbekistan	55,5	62,8	56,2	63,0	56,9	63,3
Republic of Karakalpakstan	9,2	51,6	9,3	51,1	9,3	51,0
Andijan region	529,2	70,0	536,5	70,0	544,2	70,1
Bukhara region	35,8	69,2	36,2	69,5	36,7	69,8
Djizzak region	47,0	69,9	47,7	70,0	48,3	70,2
Kashkadarya region	77,5	74,7	78,9	74,9	80,3	75,1
Navoi region	7,2	59,7	7,2	59,9	7,2	60,1
Namangan region	264,8	62,5	268,7	62,5	272,9	62,5
Samarkand region	161,8	73,2	164,2	73,5	166,5	73,8
Surkhandarya region	88,3	80,3	89,8	80,4	91,5	80,5
Syrdarya region	152,0	68,0	153,7	68,2	155,3	68,5
Tashkent region	291,1	59,9	292,3	60,1	293,8	60,3
Ferghana region	404,4	71,1	409,2	71,2	414,6	71,4
Khorezm region	221,3	76,5	224,9	76,8	228,4	77,1

End of table 21

Population density and rural population % by regions (at the beginning of year)

	2004		2005	
	population density, people/km ²	Rural population, % of total	population density, people/km ²	Rural population, % of total
Republic of Uzbekistan	57,5	63,5	58,2	63,7
Republic of Karakalpakstan	9,4	51,3	9,4	51,3
Andijan region	551,2	70,2	559,2	70,4
Bukhara region	37,1	70,0	37,5	70,3
Djizzak region	48,9	70,1	49,5	70,0
Kashkadarya region	81,8	75,2	83,3	75,2
Navoi region	7,3	60,2	7,3	60,3
Namangan region	275,3	62,5	281,0	62,7
Samarkand region	168,7	74,1	171,2	74,3
Surkhandarya region	92,9	80,6	94,5	80,7
Syrdarya region	156,3	68,6	157,2	68,7
Tashkent region	294,8	60,5	296,2	60,6
Ferghana region	419,6	71,6	425,8	71,8
Khorezm region	231,6	77,4	235,3	77,6

Table 22

Able-bodied population aged 15 and older by 01.01.2005 (thousands)

	Total			Urban			Rural		
	total	female	male	total	female	male	total	female	male
Population aged 15 and older	17310,7	8775,8	8534,9	6725,1	3439,4	3285,7	10585,6	5336,4	5249,2
Literacy rate (percentage of literate population to population aged 15 and older, difference from 100%)	0,69	0,85	0,52	0,64	0,85	0,40	0,72	0,85	0,59
Literacy index	0,993	0,992	0,995	0,994	0,992	0,996	0,993	0,992	0,994

Table 23

Average family size

	2000			2001			2002		
	total	urban	rural	total	urban	rural	total	urban	rural
Rep. of Uzbekistan	5,4	4,6	6,0	5,3	4,6	5,9	5,1	4,4	5,8
Rep. of Karakalpakstan	6,3	5,9	6,7	6,1	5,9	6,3	5,9	5,6	6,2
Andijan region	5,6	5,2	5,9	5,7	5,4	5,8	5,6	5,1	5,8
Bukhara region	5,3	4,7	5,6	5,0	4,5	5,3	4,7	3,9	5,2
Djizzak region	6,2	5,1	6,8	6,0	5,4	6,3	6,0	5,1	6,5
Kashkadarya region	5,7	5,3	5,9	5,5	4,8	5,9	5,6	5,1	5,9
Navoi region	4,7	4,2	5,3	4,4	4,0	4,9	4,5	4,1	5,0
Namangan region	5,9	6,1	5,9	5,9	6,1	5,7	5,7	5,8	5,7
Samarkand region	5,6	4,6	6,3	5,3	4,5	5,9	4,9	3,5	5,8
Surkhandarya region	6,2	5,2	6,5	6,2	5,9	6,3	5,9	5,7	6,0
Syrdarya region	5,3	4,4	5,8	5,4	4,5	6,0	5,5	4,9	5,8
Tashkent region	4,6	3,4	5,9	4,8	3,8	5,9	4,7	3,7	5,7
Ferghana region	5,4	4,4	5,9	5,4	4,5	5,9	5,2	4,5	5,5
Khorezm region	5,9	5,7	6,0	6,0	5,0	6,3	5,6	4,5	5,9
Tashkent city	4,0	4,0	-	4,1	4,1	-	3,8	3,8	-

End of table 23

Average family size

	2003			2004		
	total	urban	rural	total	urban	rural
Rep. of Uzbekistan	5,1	4,5	5,5	5,1	4,5	5,6
Rep. of Karakalpakstan	6,6	6,4	6,8	6,6	6,4	6,8
Andijan region	5,4	5,5	5,4	5,5	5,5	5,5
Bukhara region	4,7	4,8	4,7	4,7	4,8	4,7
Djizzak region	6,4	5,5	6,8	6,4	5,6	6,9
Kashkadarya region	5,6	5,1	5,8	5,7	5,1	5,9
Navoi region	4,9	4,4	5,3	4,9	4,5	5,3
Namangan region	5,3	5,7	5,1	5,4	5,8	5,2
Samarkand region	5,0	4,0	5,5	5,0	4,0	5,5
Surkhandarya region	5,6	5,3	5,7	5,7	5,4	5,8
Syrdarya region	5,1	4,0	5,8	5,1	4,0	5,8
Tashkent region	4,9	4,0	5,7	4,9	4,0	5,8
Ferghana region	4,7	4,2	5,0	4,8	4,2	5,0
Khorezm region	5,9	5,3	6,1	6,0	5,4	6,2
Tashkent city	3,7	3,7	-	3,7	3,7	-

Table 24

Life expectancy at birth (years)

	2000	2001	2002	2003	2004
Total					
both sexes	70,8	71,3	71,2	71,6	72,5
women	73,2	73,6	73,5	73,8	74,7
men	68,4	68,9	68,9	69,4	70,3
Urban population					
both sexes	70,2	70,7	70,5	71,1	72,0
women	73,5	74,0	73,6	74,3	75,1
men	66,8	67,3	67,3	67,9	68,9
Rural population					
both sexes	71,2	71,7	71,7	71,9	72,8
women	72,9	73,3	73,3	73,4	74,4
men	69,6	70,1	70,2	70,5	71,2

Table 25

Birth and mortality rates by region

	Number of live births per 1,000 people			Number of deaths per 1,000 people		
	total	urban	rural	total	urban	rural
Republic of Uzbekistan						
2000	21,3	17,7	23,5	5,5	6,6	4,8
2001	20,4	17,1	22,4	5,3	6,4	4,6
2002	21,0	17,4	23,1	5,4	6,6	4,7
2003	19,8	16,5	21,7	5,3	6,4	4,7
2004	20,8	17,7	22,6	5,0	6,1	4,4
Republic of Karakalpakstan						

2000	24,0	22,1	25,8	5,6	5,7	5,5
2001	21,7	19,5	23,8	5,9	6,0	5,7
2002	21,8	19,4	24,1	5,9	6,0	5,9
2003	20,6	18,4	22,8	5,6	5,6	5,5
2004	22,4	21,4	23,5	5,2	5,2	5,2
Andijan region						
2000	19,9	19,5	20,1	5,2	6,3	4,8
2001	19,6	19,4	19,8	5,0	6,1	4,5
2002	20,3	18,5	21,0	5,2	6,3	4,7
2003	18,7	16,8	19,5	5,2	5,9	4,8
2004	20,0	17,6	21,1	4,9	6,2	4,3
Bukhara region						
2000	20,0	15,9	21,8	4,7	5,1	4,5
2001	20,2	15,5	22,3	4,5	5,2	4,3
2002	20,1	15,6	22,0	4,6	5,3	4,3
2003	18,8	15,8	20,2	4,6	5,4	4,3
2004	19,4	15,1	21,2	4,5	5,1	4,2
Djizzak region						
2000	24,3	18,9	26,7	4,4	4,2	4,4
2001	23,5	18,3	25,8	4,3	4,2	4,4
2002	23,4	17,7	25,8	4,4	4,3	4,4
2003	21,8	17,5	23,6	4,2	4,0	4,3
2004	22,7	18,9	24,4	4,0	3,8	4,1
Kashkadarya region						
2000	26,3	21,3	28,0	4,4	4,6	4,3
2001	24,2	19,8	25,7	4,4	4,5	4,4
2002	23,9	19,3	25,4	4,4	4,6	4,3
2003	23,5	19,3	24,9	4,1	4,4	4,0
2004	22,7	19,0	24,0	4,0	4,2	3,9
Navoi region						
2000	19,4	16,8	21,1	5,3	6,0	4,9
2001	19,1	16,4	20,9	5,1	5,5	4,8
2002	19,5	17,2	21,0	5,3	5,9	4,8
2003	18,9	17,0	20,2	5,0	5,6	4,6
2004	20,0	18,4	21,2	4,9	5,5	4,5
Namangan region						
2000	21,0	20,6	21,2	5,1	5,5	4,8
2001	20,6	23,7	18,8	4,7	5,3	4,4
2002	21,4	23,1	20,4	4,9	5,5	4,5
2003	20,0	20,2	19,8	5,0	5,4	4,7
2004	20,6	18,2	22,0	4,7	4,6	4,7
Samarkand region						
2000	22,7	16,6	25,0	5,3	6,2	4,9
2001	22,5	15,8	25,0	5,0	6,1	4,6
2002	22,9	16,6	25,2	5,1	6,2	4,8
2003	21,4	15,3	23,6	4,9	5,8	4,6
2004	22,0	17,0	23,7	4,7	5,6	4,4

Surkhandarya region						
2000	25,5	19,3	27,1	4,6	4,7	4,6
2001	22,8	17,9	24,0	4,3	4,5	4,3
2002	24,4	18,0	25,9	4,3	4,6	4,2
2003	22,5	17,6	23,7	4,3	4,5	4,3
2004	22,1	18,1	23,1	4,0	4,4	3,9
Syrdarya region						
2000	22,0	19,0	23,5	5,4	7,0	4,7
2001	21,4	19,2	22,4	5,3	6,9	4,6
2002	22,8	20,5	24,0	5,3	6,7	4,7
2003	20,5	18,5	21,4	5,2	7,0	4,4
2004	21,2	20,0	21,8	5,0	6,5	4,2
Tashkent region						
2000	18,5	16,2	20,0	6,4	8,0	5,4
2001	18,0	15,4	19,8	6,3	7,7	5,3
2002	18,7	16,1	20,5	6,5	7,8	5,6
2003	17,9	15,2	19,6	6,4	7,7	5,5
2004	19,7	17,3	21,2	6,2	7,5	5,3
Fergana region						
2000	19,7	17,3	20,8	5,3	6,4	4,9
2001	18,8	15,8	20,0	5,0	6,1	4,6
2002	20,0	16,9	21,3	5,2	6,3	4,7
2003	18,8	15,7	20,0	5,2	6,2	4,8
2004	21,1	18,3	22,3	4,8	5,7	4,5
Khorezm region						
2000	24,0	19,9	25,3	5,2	6,3	4,8
2001	22,3	18,1	23,6	4,9	6,0	4,5
2002	22,5	18,5	23,7	4,9	6,4	4,4
2003	20,8	17,4	21,9	5,0	5,9	4,7
2004	22,5	18,9	23,5	4,6	5,5	4,3
Tashkent city						
2000	14,5	14,5	-	8,5	8,5	-
2001	14,0	14,0	-	8,2	8,2	-
2002	14,7	14,7	-	8,6	8,6	-
2003	14,5	14,5	-	8,3	8,3	-
2004	16,0	16,0	-	8,0	8,0	-

Table 26

Unemployment rate by regions*

	2000			2001			2002		
	total	urban	rural	total	urban	rural	total	urban	rural
Rep. of Uzbekistan	0,4	0,3	0,4	0,4	0,3	0,5	0,4	0,3	0,4
Rep. of Karakalpakstan	1,7	1,9	1,4	1,7	1,6	1,7	1,5	1,5	1,4
Andijan region	0,3	0,1	0,4	0,3	0,1	0,4	0,3	0,1	0,4
Bukhara region	0,3	0,1	0,3	0,3	0,1	0,4	0,1	0,1	0,2
Djizzak region	0,3	0,1	0,4	0,3	0,2	0,3	0,3	0,3	0,4
Kashkadarya region	0,3	0,2	0,3	0,3	-	0,4	0,2	-	0,3
Navoi region	1,0	0,6	1,3	0,5	0,4	0,7	0,6	0,4	0,8
Namangan region	0,5	0,3	0,6	0,3	0,2	0,4	0,3	0,1	0,4
Samarkand region	0,4	0,3	0,5	0,5	0,2	0,6	0,5	0,3	0,6
Surkhandarya region	0,2	-	0,2	0,2	-	0,2	0,2	0,1	0,2
Syrdarya region	0,4	0,3	0,4	0,7	0,5	0,8	0,4	0,2	0,5
Tashkent region	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Ferghana region	0,2	0,1	0,3	0,3	0,2	0,4	0,2	0,1	0,3
Khorezm region	0,5	0,7	0,4	0,8	0,2	1,1	1,0	0,9	1,0
Tashkent city	0,3	0,3	-	0,3	0,3	-	0,2	0,2	-

* Officially registered unemployment.

End of table 26

Unemployment rate by regions*

	2003			2004		
	total	urban	rural	total	urban	rural
Rep. of Uzbekistan	0,3	0,2	0,4	0,4	0,2	0,5
Rep. of Karakalpakstan	1,1	1,2	1,0	1,0	0,7	1,4
Andijan region	0,2	-	0,2	0,2	0,1	0,2
Bukhara region	0,1	-	0,1	0,1	0,0	0,2
Djizzak region	0,2	0,1	0,2	0,3	0,2	0,4
Kashkadarya region	0,2	-	0,3	0,3	0,1	0,4
Navoi region	0,6	0,4	0,7	0,9	0,5	1,2
Namangan region	0,4	0,2	0,6	0,3	0,2	0,4
Samarkand region	0,3	0,1	0,5	0,3	0,1	0,5
Surkhandarya region	0,3	0,1	0,4	0,2	0,2	0,2
Syrdarya region	0,4	0,4	0,4	0,4	0,4	0,5
Tashkent region	0,1	0,1	0,1	0,1	0,1	0,1
Ferghana region	0,1	0,1	0,2	0,1	0,1	0,1
Khorezm region	1,3	0,2	1,8	1,6	0,8	1,9
Tashkent city	0,2	0,2	-	0,2	0,2	-

Table 27

Ratio of employed in urban and rural areas (as % of total employed)

	2000			2001			2002		
	total	urban	rural	total	urban	rural	total	urban	rural
Rep. of Uzbekistan	100,0	46,4	53,6	100,0	44,7	55,3	100,0	44,8	55,2
Rep. of Karakalpakstan	100,0	54,2	45,8	100,0	52,1	47,9	100,0	51,8	48,2
Andijan region	100,0	39,1	60,9	100,0	34,5	65,5	100,0	35,0	65,0
Bukhara region	100,0	41,5	58,5	100,0	38,2	61,8	100,0	37,1	62,9
Djizzak region	100,0	38,3	61,6	100,0	38,0	62,0	100,0	39,0	61,0
Kashkadarya region	100,0	26,6	73,4	100,0	27,7	72,3	100,0	30,0	70,0
Navoi region	100,0	51,2	48,8	100,0	50,3	49,7	100,0	47,9	52,1
Namangan region	100,0	42,2	57,8	100,0	41,5	58,5	100,0	43,0	57,0
Samarkand region	100,0	38,5	61,5	100,0	37,0	63,0	100,0	36,7	63,3
Surkhandarya region	100,0	28,5	71,5	100,0	28,1	71,9	100,0	28,4	71,6
Syrdarya region	100,0	38,1	61,9	100,0	38,4	61,6	100,0	36,6	63,4
Tashkent region	100,0	49,0	51,0	100,0	47,7	52,3	100,0	49,5	50,5
Ferghana region	100,0	39,5	60,5	100,0	36,0	64,0	100,0	33,5	66,5
Khorezm region	100,0	31,3	68,7	100,0	27,7	72,3	100,0	28,4	71,6

End of table 27

Ratio of employed in urban and rural areas (as % of total employed)

	2003			2004		
	total	urban	rural	total	urban	rural
Rep. of Uzbekistan	100,0	44,8	55,2	100,0	44,7	55,3
Rep. of Karakalpakstan	100,0	51,8	48,2	100,0	51,8	48,2
Andijan region	100,0	35,0	65,0	100,0	35,0	65,0
Bukhara region	100,0	37,1	62,9	100,0	36,4	63,6
Djizzak region	100,0	39,1	60,9	100,0	39,0	61,0
Kashkadarya region	100,0	30,0	70,0	100,0	30,0	70,0
Navoi region	100,0	47,9	52,1	100,0	47,9	52,1
Namangan region	100,0	43,0	57,0	100,0	42,9	57,1
Samarkand region	100,0	36,7	63,3	100,0	36,7	63,3
Surkhandarya region	100,0	28,4	71,6	100,0	28,4	71,6
Syrdarya region	100,0	36,6	63,4	100,0	36,6	63,4
Tashkent region	100,0	49,5	50,5	100,0	49,5	50,5
Ferghana region	100,0	33,5	66,5	100,0	33,5	66,5
Khorezm region	100,0	28,4	71,6	100,0	28,4	71,6

2. Economy

Table 28
Composition of GDP, %

	2000	2001	2002	2003	2004
GDP – total:	100,0	100,0	100,0	100,0	100,0
GDP – total:	87,5	88,1	87,4	86,3	85,9
Value added	14,2	14,1	14,5	15,8	17,5
industry	30,1	30,0	30,1	28,4	26,4
agriculture	6,0	5,8	4,9	4,7	4,8
construction	37,0	38,0	37,7	37,2	37,0
services	10,8	11,7	11,0	10,1	9,6
trade	7,7	7,5	8,2	9,4	10,2
transport and communications	18,7	19,0	18,7	17,9	17,4
other branches	12,5	11,9	12,6	13,7	14,1
Net taxes, including import taxes	45,4	57,0	59,3	66,2	72,7
Ratio between foreign trade turnover and GDP					
exports	24,0	29,9	31,2	36,9	40,7
imports	21,4	27,1	28,1	29,3	32,0

Table 29
Share of medium and small entrepreneurship in gross regional product, 2003 (as % of GDP)

	Total	Including Small & medium enterprises	Individual business
Republic of Uzbekistan	35,6	18,6	9,2
Republic of Karakalpakstan	42,9	29,8	7,1
Andijan region	37,8	13,4	13,3
Bukhara region	38,0	21,2	7,6
Djizzak region	59,0	34,8	10,1
Kashkadarya region	37,6	21,8	7,4
Navoi region	20,8	10,0	4,7
Namangan region	42,5	19,9	9,7
Samarkand region	49,3	20,5	13,2
Surkhandarya region	43,5	22,8	7,7
Syrdarya region	57,3	36,0	7,1
Tashkent region	33,8	17,1	7,0
Ferghana region	40,0	21,0	9,4
Khorezm region	42,5	20,0	8,7
Tashkent city	56,1	40,5	15,6

Table 30

Employed at small, medium and micro enterprises by sectors

	thousand people	2004	
		% of total	2003 in %
Total	1219,2	100,0	135,4
industry	138,8	11,4	103,7
agriculture	738,0	60,5	162,7
construction	64,2	5,3	105,4
transportation	10,3	0,8	107,6
trade and public catering	100,2	8,2	105,0

Table 31

New private sector and informal sector

	2000	2001	2002	2003	2004
Share of the population engaged in the new private sector as % of total employment	47,8	49,8	51,4	53,7	57,2
Share of the population engaged in the informal sector as % of total employment	41,3	44,5	46,2	48,6	51,9
Share of informal sector in GDP (%)	34,9	33,9	33,1	31,4	30,1

Table 32

Investments by sectors and source, %

	2000	2001	2002	2003	2004
Total	100,0	100,0	100,0	100,0	100,0
for production purposes	57,5	63,1	59,5	63,6	66,0
industry					
agriculture and forestry	29,7	38,9	32,9	29,0	29,0
for non-production purposes	5,7	5,5	6,7	5,0	4,3
Financed by state budget	42,5	36,9	40,5	36,4	34,0
Освоено из государственного бюджета	29,2	21,5	23,9	16,4	14,4

Table 33

Social and cultural amenities in operation

	Comprehensive schools (capacity thousand pupils)	Pre-school establishments (thousand seats)	Hospitals (thousand beds)	Policlinics (thousand visits in shifts)	Clubs and cultural buildings (thousand seats)
2000					
total	17,3	-	0,7	8,3	0,2
urban	0,1	-	0,4	0,5	-
rural	17,2	-	0,3	7,8	0,2
2001					
total	26,9	-	0,8	13,5	-
urban	1,6	-	0,4	0,4	-
rural	25,3	-	0,4	13,1	-
2002					
total	19,3	0,1	0,3	16,8	0,4
urban	1,6	-	0,1	0,2	-
rural	17,7	0,1	0,2	16,6	0,4
2003					
total	22,4	-	0,2	16,1	...
urban	2,0	-	-	1,0	...
rural	20,4	-	0,2	15,1	...
2004					
total	19,9	0,2	0,2	12,6	0,4
urban	2,3	0,2	0,2	0,5	-
rural	17,6	-	-	12,1	0,4

3. Education

Table 34

Pre-school enrolment (as % of all pre-school aged children)

	2000	2001	2002	2003	2004
total	18,2	19,4	19,9	19,2	19,3
urban	35,3	36,0	35,5	35,3	35,7
rural	10,6	12,0	12,9	12,1	12,1

Table 35

Enrolment in specialized secondary and higher schools

	2000	2001	2002	2003	2004
Specialized secondary students (thousand)	324,1	446,1	545,9	684,0	697,5
of which women (%)	49,0	47,1	46,1	46,3	53,0
Number of students in higher schools (thousand)	183,6	207,2	232,3	254,4	263,6
of which women (%)	37,8	38,7	38,9	38,8	40,7

4. Healthcare

Table 36

Number of people per doctor, nurse and hospital bed

	2000			2001			2002		
	doctor	nurse	bed	doctor	nurse	bed	doctor	nurse	bed
Republic of Uzbekistan	305	96	179	309	95	179	314	96	173
Republic of Karakalpakstan	347	95	212	350	93	211	353	93	171
Andijan region	321	96	158	326	97	162	331	99	162
Bukhara region	313	82	202	303	83	208	300	83	213
Djizzak region	431	108	198	437	107	201	463	110	204
Kashkadarya region	363	100	203	376	98	198	389	98	179
Navoi region	330	93	214	332	91	209	333	90	190
Namangan region	343	99	168	354	100	170	359	99	151
Samarkand region	308	114	181	312	114	185	317	118	190
Surkhandarya region	393	111	233	400	108	207	417	108	211
Syrdarya region	361	83	155	365	85	153	391	84	151
Tashkent region	389	96	212	398	98	214	409	101	215
Ferghana region	397	90	163	407	89	166	407	86	167
Khorezm region	337	103	199	342	103	196	348	102	183
Tashkent city	125	76	121	124	77	121	125	77	116

Continuation of table 36

Number of people per doctor, nurse and hospital bed

	2003			2004		
	doctor	nurse	bed	doctor	nurse	bed
Republic of Uzbekistan	318	96	174	334	98	182
Republic of Karakalpakstan	357	96	167	392	98	169
Andijan region	330	99	164	360	105	167
Bukhara region	281	81	215	290	83	216
Djizzak region	463	109	205	474	111	209
Kashkadarya region	390	97	179	432	99	190
Navoi region	335	90	191	338	93	191
Namangan region	365	96	151	399	98	155
Samarkand region	319	118	190	333	118	192
Surkhandarya region	420	106	213	451	106	224
Syrdarya region	404	85	155	420	86	157
Tashkent region	411	102	220	446	104	222
Ferghana region	409	85	170	424	90	211
Khorezm region	343	102	184	358	105	198
Tashkent city	133	79	117	131	77	118

Table 37

Mortality rate by selected causes of death and regions (per 100,000 people)

	2000				2001			
	all causes of death	from circulatory illnesses	from malignant tumors	from respiratory illnesses	all causes of death	from circulatory illnesses	from malignant tumors	from respiratory illnesses
Republic of Uzbekistan	548,0	288,5	38,8	63,5	528,9	282,3	37,4	55,1
Republic of Karakalpakstan	559,6	180,9	40,0	120,1	586,0	191,8	44,4	107,5
Andijan region	521,6	293,6	30,8	63,7	495,5	276,9	27,1	61,6
Bukhara region	469,7	263,2	31,7	42,5	454,6	257,5	30,5	38,6
Djizzak region	435,8	190,7	30,0	61,3	434,1	190,7	29,6	57,9
Kashkadarya region	439,6	204,7	22,3	74,6	443,0	212,6	21,4	69,5
Navoi region	534,7	267,3	50,0	43,8	510,7	254,3	49,8	38,9
Namangan region	508,0	266,8	27,8	91,2	474,0	256,4	25,8	63,6
Samarkand region	527,0	285,1	32,7	63,0	499,7	280,5	28,8	53,5
Surkhandarya region	464,2	220,1	25,4	74,5	443,8	219,8	27,5	60,5
Syrdarya region	542,4	276,6	44,6	40,0	530,7	276,5	35,3	36,2
Tashkent region	644,6	363,5	49,4	42,8	625,6	358,8	48,7	35,5
Ferghana region	534,4	279,7	30,9	55,3	504,2	274,9	31,4	43,0
Khorezm region	520,0	291,4	29,9	77,4	488,6	286,9	28,6	69,1
Tashkent city	845,1	522,8	97,7	32,2	819,6	495,3	94,1	35,3

Continuation of table 37

Mortality rate by selected causes of death and regions (per 100,000 people)

	2002				2003			
	all causes of death	from circulatory illnesses	from malignant tumors	from respiratory illnesses	all causes of death	from circulatory illnesses	from malignant tumors	from respiratory illnesses
Republic of Uzbekistan	540,2	296,3	37,3	54,5	529,7	289,7	37,2	49,0
Republic of Karakalpakstan	591,2	213,8	34,0	122,7	557,0	188,9	39,6	114,9
Andijan region	519,1	299,6	30,8	52,4	517,1	246,9	34,2	42,1
Bukhara region	458,4	258,0	33,8	37,6	463,2	261,6	32,4	42,9
Djizzak region	440,1	207,6	32,2	50,5	423,2	204,9	30,6	46,9
Kashkadarya region	435,4	231,2	17,4	59,9	411,8	225,0	20,6	43,0
Navoi region	525,2	268,9	51,0	33,7	499,9	261,6	46,7	32,9
Namangan region	489,0	287,2	26,6	60,6	497,6	300,8	28,0	56,6
Samarkand region	513,0	284,3	25,8	56,9	489,9	263,3	27,8	50,4
Surkhandarya region	428,6	216,8	23,5	52,2	434,4	234,7	23,3	50,4
Syrdarya region	530,5	282,6	43,8	40,8	519,4	286,6	36,4	38,7
Tashkent region	650,2	366,2	50,1	45,7	641,4	379,3	48,3	37,7
Ferghana region	516,9	294,4	32,9	44,3	519,7	306,8	29,6	43,8
Khorezm region	489,5	286,9	30,8	59,7	497,8	296,4	27,7	46,7
Tashkent city	863,8	523,9	97,1	40,2	832,9	492,7	95,8	40,0

Continuation of table 37

Mortality rate by selected causes of death and regions (per 100,000 people)

	2004			
	all causes of death	from circulatory illnesses	from malignant tumors	from respiratory illnesses
Republic of Uzbekistan	502,1	274,0	36,6	42,9
Republic of Karakalpakstan	523,9	183,3	41,2	91,7
Andijan region	485,9	219,1	29,3	35,5
Bukhara region	450,1	245,5	34,9	44,6
Djizzak region	399,4	199,2	30,6	38,3
Kashkadarya region	398,5	230,6	20	39
Navoi region	487,6	255,0	43,6	26,4
Namangan region	467,7	279,5	26,4	52
Samarkand region	474,2	287,9	26,2	46,8
Surkhandarya region	399,2	227,6	23,4	38,3
Syrdarya region	496,7	265,5	37,4	35,9
Tashkent region	617,3	338,3	49,1	26,8
Ferghana region	481,6	271,1	31,6	44,6
Khorezm region	457,7	274,5	29,1	43,2
Tashkent city	796,1	460,6	92	35,4

Table 38

Infant mortality rate (number of children dying under age one, per 1,000 live births)

	2000			2001			2002		
	total	urban	rural	total	urban	rural	total	urban	rural
Republic of Uzbekistan	18,9	22,4	17,3	18,3	21,2	17,0	16,7	19,9	15,3
Republic of Karakalpakstan	20,5	23,0	18,5	22,3	26,2	19,3	19,9	24,0	16,7
Andijan region	15,2	22,4	12,1	15,1	21,0	12,6	13,6	18,3	11,7
Bukhara region	19,0	23,3	17,6	18,0	23,0	16,5	15,1	20,3	13,5
Djizzak region	16,2	18,7	15,5	17,0	18,8	16,5	13,9	14,7	13,7
Kashkadarya region	19,0	20,1	18,7	18,8	19,3	18,6	17,2	18,4	16,9
Navoi region	18,4	25,0	14,8	17,4	21,2	15,5	14,1	16,6	12,7
Namangan region	18,8	26,7	14,2	17,9	20,2	16,2	16,8	20,6	14,2
Samarkand region	16,0	17,1	15,8	15,9	18,6	15,3	15,1	17,0	14,6
Surkhandarya region	20,7	24,9	19,9	18,5	22,0	17,8	15,8	20,0	15,1
Syrdarya region	20,4	21,5	20,0	19,7	19,1	19,9	18,0	18,6	17,8
Tashkent region	19,6	20,2	19,3	17,1	17,6	16,9	16,8	17,5	16,4
Ferghana region	19,3	21,0	18,7	19,9	21,0	19,5	18,2	18,7	18,0
Khorezm region	24,6	46,0	19,4	19,9	32,8	16,8	19,3	31,8	16,4
Tashkent city	19,5	19,5	-	20,8	20,8	-	20,9	20,9	-

Continuation of table 38

Infant mortality rate (number of children dying under age one, per 1,000 live births)

	2003			2004		
	total	urban	rural	total	urban	rural
Republic of Uzbekistan	16,4	20,5	14,5	15,4	18,9	13,8
Republic of Karakalpakstan	18,3	20,1	16,9	18,4	22,0	15,2
Andijan region	13,8	18,9	11,9	14,0	20,2	11,8
Bukhara region	14,9	22,0	12,5	14,0	16,5	13,2
Djizzak region	13,9	18,3	12,5	12,0	11,1	12,3
Kashkadarya region	14,7	16,7	14,1	14,0	14,3	13,9
Navoi region	15,7	20,5	13,0	12,6	16,2	10,5
Namangan region	15,8	20,1	13,1	14,0	17,1	12,5
Samarkand region	13,7	14,6	13,5	12,2	12,0	12,2
Surkhandarya region	14,7	18,5	14,0	11,6	16,1	10,8
Syrdarya region	17,9	18,5	17,7	18,1	17,4	18,4
Tashkent region	15,2	16,6	14,5	15,6	16,8	15,0
Ferghana region	20,0	24,6	18,5	20,1	23,1	19,2
Khorezm region	18,9	26,1	17,2	17,1	26,9	14,8
Tashkent city	24,9	24,9	-	22,6	22,6	-

5. Ecology

Table 39

Amount of harmful emissions into the atmosphere (thousand tons per year)

	2000	2001	2002	2003	2004
Tashkent	12,7	10,9	10,5	11,6	9,7
Andijan	9,7	8,7	9,5	8,9	6,3
Navoi	28,1	27,9	23,5	24,2	23,9
Samarkand	7,0	6,6	5,9	5,5	5,1
Almalyk	99,3	98,8	97,3	99,3	107,7
Angren	116,3	91,7	101,8	93,1	99,0
Bekabad	7,2	13,0	13,4	9,1	8,7
Chirchik	5,7	5,2	4,9	4,1	7,6
Kokand	3,7	3,8	3,3	3,4	1,3
Ferghana	47,1	44,1	46,6	41,5	38,4
Margilan	0,1	0,1	0,1	0,1	0,02
Nukus	4,1	4,4	3,1	2,8	3,4
Urgench	3,7	6,8	6,6	6,1	4,4
Bukhara	3,3	3,1	2,1	1,8	2,2
Djizzak	0,8	0,8	0,8	0,7	0,9
Karshi	2,4	2,2	1,7	5,7	3,1
Namangan	3,4	4,5	4,1	4,0	1,2
Termez	0,6	1,0	0,3	1,6	0,9
Gulistan	0,7	0,6	0,6	0,6	0,5

