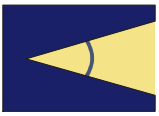
European Observatory on Health Care Systems



Health Care Systems in Transition

Turkmenistan





The European Observatory on Health Care Systems is a partnership between the World Health Organization Regional Office for Europe, the Government of Norway, the Government of Spain, the European Investment Bank, the World Bank, the London School of Economics and Political Science, and the London School of Hygiene & Tropical Medicine in association with the Open Society Institute.

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2000

AMS 5012669 (TKM)
Target 19
2000

Target 19 – RESEARCH AND KNOWLEDGE FOR HEALTH
By the year 2005, all Member States should have health research, information and communication systems that better support the acquisition, effective utilization, and dissemination of knowledge to support health for all.
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Keywords

DELIVERY OF HEALTH CARE
EVALUATION STUDIES
FINANCING, HEALTH
HEALTH CARE REFORM
HEALTH SYSTEM PLANS – organization and administration
TURKMENISTAN

European Observatory on Health Care Systems
WHO Regional Office for Europe
Government of Norway
Government of Spain
European Investment Bank
World Bank
London School of Economics and Political Science
London School of Hygiene & Tropical Medicine
in association with Open Society Institute

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DFID Department for International Development

With thanks for the support of the
United Kingdom Department for International Development

Foreword

The Health Care Systems in Transition (HiT) profiles are country-based reports that provide an analytical description of each health care system and of reform initiatives in progress or under development. The HiTs are a key element that underpins the work of the European Observatory on Health Care Systems.

The Observatory is a unique undertaking that brings together WHO Regional Office for Europe, the Governments of Norway and Spain, the European Investment Bank, the World Bank, the London School of Economics and Political Science, and the London School of Hygiene & Tropical Medicine in association with the Open Society Institute. This partnership supports and promotes evidence-based health policy-making through comprehensive and rigorous analysis of the dynamics of health care systems in Europe.

The aim of the HiT initiative is to provide relevant comparative information to support policy-makers and analysts in the development of health care systems and reforms in the countries of Europe and beyond. The HiT profiles are building blocks that can be used to:

- learn in detail about different approaches to the financing, organization and delivery of health care services;
- describe accurately the process and content of health care reform programmes and their implementation;
- highlight common challenges and areas that require more in-depth analysis;
- provide a tool for the dissemination of information on health systems and the exchange of experiences of reform strategies between policy-makers and analysts in the different countries of the European Region.

The HiT profiles are produced by country experts in collaboration with the research directors and staff of the European Observatory on Health Care Systems. In order to maximize comparability between countries, a standard template and questionnaire have been used. These provide detailed guidelines

and specific questions, definitions and examples to assist in the process of developing a HiT. Quantitative data on health services are based on a number of different sources in particular the WHO Regional Office for Europe health for all database, Organisation for Economic Cooperation and Development (OECD) health data and the World Bank.

Compiling the HiT profiles poses a number of methodological problems. In many countries, there is relatively little information available on the health care system and the impact of reforms. Most of the information in the HiTs is based on material submitted by individual experts in the respective countries, which is externally reviewed by experts in the field. Nonetheless, some statements and judgements may be coloured by personal interpretation. In addition, the absence of a single agreed terminology to cover the wide diversity of systems in the European Region means that variations in understanding and interpretation may occur. A set of common definitions has been developed in an attempt to overcome this, but some discrepancies may persist. These problems are inherent in any attempt to study health care systems on a comparative basis.

The HiT profiles provide a source of descriptive, up-to-date and comparative information on health care systems, which it is hoped will enable policy-makers to learn from key experiences relevant to their own national situation. They also constitute a comprehensive information source on which to base more in-depth comparative analysis of reforms. This series is an ongoing initiative. It is being extended to cover all the countries of Europe and material will be updated at regular intervals, allowing reforms to be monitored in the longer term. HiTs are also available on the Observatory's website at http://www.observatory.dk.

Acknowledgements

The HiT on Turkmenistan was written by Chary Mamedkuliev (Turkmenistan Ministry of Health), Elena Shevkun (WHO Regional Office for Europe) and Steve Hajioff (European Centre on the Health of Societies in Transition). The assistance of Sergey Sinelnikov is gratefully acknowledged.

The European Observatory on Health Care Systems is grateful to the following reviewers for their comments: Joana Godinho (World Bank) and Gulin Gedik (WHO Regional Office for Europe). We are also grateful to the Ministry of Health and Medical Industry of Turkmenistan for its support

The HiTs for the central Asian republics were prepared under the direction of Serdar Savas, then Director Programme Management and supported by the Health Care Policy and Systems Programme, WHO Regional Office for Europe, under the coordination of Gulin Gedik Project Officer for CARNET countries. The support of the United Kingdom for International Development for the series of HiTs on central Asian republics is also acknowledged with thanks.

The current series of the Health Care Systems in Transition profiles has been prepared by the research directors and staff of the European Observatory on Health Care Systems.

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The Observatory team working on the HiT profiles is led by Josep Figueras, Head of the Secretariat and the research directors Martin McKee, Elias Mossialos and Richard Saltman. Technical coordination is by Suszy Lessof. The series editors are Anna Dixon, Judith Healy and Elizabeth Kerr.

The research director for the Turkmenistan HiT was Martin McKee.

Administrative support, design and production of the HiTs has been undertaken by a team led by Phyllis Dahl and comprising Myriam Andersen, Sue Gammerman and Anna Maresso. Special thanks are extended to the WHO Regional Office for Europe health for all database from which data on health services were extracted; to the OECD for the data on health services in western Europe, and to the World Bank for the data on health expenditure in central and eastern European (CEE) countries. Thanks are also due to national statistical offices which have provided national data.

Introduction and historical background

Introductory overview

Turkmenistan declared its independence on 27 October 1991 after the collapse of the USSR. The country has an estimated population of 4 611 700 (1997) and occupies 491 200 km^2. With 1768 km of Caspian Sea coastline to the west, the country adjoins Kazakhstan and Uzbekistan to the north, and Afghanistan and Iran to the south. The Karakum desert spreads over 80% of the country with the Kopet Dag Mountains separating Turkmenistan from Iran. Ashgabat is the capital city of the country. There are five administrative regions (velayats): Akhal, Balkan, Dashkhovuz, Lebap and Mary, in which are located 20 cities and 46 towns. Each velayat is itself subdivided into a number of etraps (districts) as follows: Akhal velayat (divided into 8 etraps), Balkan velayat (divided into 6 etraps), Lebap velayat (divided into 13 etraps), Dashkhovuz velayat (divided into 8 etraps) and Mary velayat (divided into 11 etraps).

The major ethnic groups are 77% Turkmen, 9.2% Uzbek, 6.7% Russian, and 2% Kazakh. The average population density is 9.4 per km^2, with about 45% of the population (1995) living in urban centres, and most of the remainder in the river valleys. Ashgabat, the capital city, has a population of 450 000. The major religious groupings are Islam (89%) and Orthodox Christian (9%). Languages spoken include Turkmen and Russian (*1*).

Turkmenistan has a young population structure (as do most central Asian republics) with nearly 40% under the age of 15 years. This is due to a high fertility rate of 3.8 children born per woman (1995) and relatively low life expectancy. Population growth, steadily rising for a number of years, may have slowed since 1995, and showed a decline between 1997 and 1998. The crude birth rate has dropped from 34.3 per 1000 population in 1990 to 21.6 in 1997 (Table 1).

Fig. 1. Map of Turkmenistan[1]

Source: CBS Worldwide Inc. World Almanac, 1998. (*1*)

Table 1. Demographic indicators

Indicators	1990	1991	1992	1993	1994	1995	1996	1997	1998
Population, million	3.7	3.7	3.9	4.0	4.0	4.6	4.6	4.6	4.3
% population change	2.6	2.5	2.6	2.6	2.5	12.9	0.7	0.3	-6.4
% population aged 0–14	40.5	40.4	39.8	39.8	39.7	–	–	–	–
% population aged 65 and over	3.8	3.8	3.9	3.7	3.6	–	–	–	–
Live births per 1000 population	34.3	33.7	34.1	34.4	34.8	28.3	24.2	21.6	–
Crude death rate (per 1000)	7.0	7.3	7.2	7.9	7.9	–	–	–	–

Source: WHO Regional Office for Europe health for all database.

Life expectancy in 1997 was 61.5 years (which is almost 15 years less than the European Union average) with 57.9 years for males and 65.3 for females (Table 2). Female life expectancy is considerably lower than in other countries of the former Soviet Union and is ten years lower in rural areas than in Ashgabat (*2*). Life expectancy at birth, improving throughout the 1980s, has worsened since 1990. Similar trends are apparent for life expectancies at one and fifteen years of age. This is in the context of an improving infant mortality rate that

[1] The maps presented in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the European Observatory on Health Care Systems or its partners concerning the legal status of any country, territory, city or area or of its authorities or concerning the delimitations of its frontiers or boundaries.

would tend partially to conceal increasing death rates in other age groups. The infant mortality rate remains high with 42.9 in 1994 (Table 2) compared to the European Union average of 6.2 deaths per 1000 live births in 1994. Infant mortality is said to have improved recently, especially in the capital city. Turkmenistan, however, still uses the definitions established by the former Soviet Union, which did not count as live births premature and low birthweight babies who died within seven days. It has been suggested that the use of the Soviet definition of a live birth leads to an underestimation of the true rate of about 20% (*2*,*3*). However, survey data from other central Asian republics suggests that there may also be more general under-registration, with the true rates up to 60% higher than those reported (*4*,*5*).

Maternal and child health are affected by multiple factors, including social and economic factors and access to health care. Turkmen mothers have a high mortality rate (42.7 per 100 000 in 1994), nearly seven times the European Union average, with the main causes of maternal deaths said to be haemorrhage and toxaemia.

Table 2. Health indicators

Indicators	1990	1991	1992	1993	1994	1995	1996	1997
Female life expectancy at birth	70.0	68.9	69.6	67.3	66.6	–	–	–
Male life expectancy at birth	63.1	62.2	63.1	61.4	61.5	–	–	–
Infant mortality rate (per 1000 live births)	45.2	46.9	43.2	44.2	42.9	–	–	–
Maternal mortality (per 100 000 live births)	42.3	46.0	58.0	42.7	42.7	–	–	–
Abortion rate (per 100 live births)	28.5	28.1	28.3	24.2	23.8	26.6	28.9	33.0
Mumps incidence rate (per 100 000)	–	84.9	118.5	54.1	23.7	13.9	37.7	101.5
% children immunized against measles	79.7	63.0	76.0	84.0	90.0	92.0	98.0	100.0
SDR diseases of circulatory system, 0–64 per 10 000	222	245	234	275	280	–	–	–
SDR diseases of circulatory system, all ages (per 10 000)	687	814	758	925	1025	–	–	–
SDR ischaemic heart disease, all ages (per 10 000)	453	507	476	605	587	–	–	–
SDR cerebrovascular disease, all ages (per 10 000)	123	154	137	189	211	–	–	–
SDR malignant neoplasms, all ages (per 10 000)	145	145	137	144	132	–	–	–
SDR external causes injury and poison, all ages (per 10 000)	75	76	69	71	70	–	–	–

Source: WHO Regional Office for Europe health for all database.

Communicable disease remains a threat to the population of Turkmenistan and epidemics of infectious diseases have increased in the 1990s. The incidence rates of tuberculosis and viral hepatitis are extremely high. In 1997, 72.3 per 100 000 new tuberculosis cases was reported, compared with 13.2 per 100 000 for the European Union. Viral hepatitis is a serious public health problem, with 22.4 per 100 000 population reported hepatitis B virus cases in 1997 and 325.1 cases of hepatitis A (*6*).

Immunization rates for tuberculosis, poliomyelitis and diphtheria dropped in the early 1990s, but have improved since; in 1991 only 63% of children were given measles vaccine compared to 100% in 1997. Turkmenistan had two mumps epidemics during the 1990s, the incidence rate reaching 101.5 cases per 100 000 population in 1997 (Table 2).

Noncommunicable disease rates have been rising. The standardized death rate from diseases of the circulatory system, for ages 0–64 years, has risen from 222 per 10 000 population in 1990 to 280 in 1994. Ischaemic heart disease has risen from 453 per 10 000 population in 1990 to 587 in 1994 (when the average for the newly independent states (NIS) of the former USSR was 418 and 118 for the European Union). The standardized death rate due to cerebrovascular disease has risen from 123 per 10 000 in 1990 to 211 in 1994. The age-standardized death rate for cancer has apparently dropped, while external causes of death such as injury and poison have changed very little. Death rates amongst men are higher for almost all causes in more rural velayats (regions) than in Ashgabat (*3*).

Historical background

The region was controlled by the Persian Empire from 600 BC until its defeat by Alexander the Great two hundred years later. The Greeks built the first cities and towns. These developed further with time and the increasing importance of the silk trade route connecting the Far East and Europe. During the eleventh century, Turkmen tribes settled closer to the Caspian Sea as they migrated westward away from the mountain ranges of Altai. The territory was, at this time, under the rule of the Seljuq Turks. The Mongols, under Genghis Khan, conquered in the thirteenth century, and held sway for two centuries until they were ousted by invading Uzbeks.

Up until the nineteenth century, Turkmenia, as it was then known, was divided into two lands, belonging to the Khanates of Khiva and Bukhara. For many years, Russia had been extending its trade routes into central Asia and, in 1868, the Khanate of Khiva was incorporated into the Russian Empire. Before

the First World War, a government was set up by Russia to ensure the security of the newly acquired territory: the Transcaspian Region of Russian Turkistan. Transport and industrial infrastructure was established and accompanied by Russian immigration into Turkmenistan.

During the Russian Civil War, the region was the site of conflict between the Red Army, the White Army, the British, and Turkmen nomads. The British were forced to withdraw their forces from Turkmenistan and, after resistance from the tribes, the Bolsheviks secured the area as the Turkistan Autonomous Republic. In 1924, Turkmenistan became an independent Soviet Socialist Republic.

Turkmenistan was less exposed to the democratization process begun by President Gorbachev during the late 1980s. It retained the Communist Party, which later became the Democratic Party of Turkmenistan – the sole political party – and kept most political power concentrated at the centre. From 1985 until independence, the Soviet Socialist Republic of Turkmenistan was governed by Saparmurat Niyazov who, in the first direct presidential election held in 1990, was retained as president. The president acts as both head of state and leader of the government. President Niyazov was re-elected in 1992 and his term, extended by popular referendum in 1994 until 2002, was further extended in 2000. Post-independence reform has proceeded at a slower pace than in some of the newly independent states. This reflects the view of the country's rulers that an evolutionary approach to the reform, of which they claim to be in favour, will produce fewer of the economic and social problems that the regime believes have dogged the states pursuing reform more rapidly.

Turkmenistan has a permanent neutral status that was unanimously approved by the General UN Assembly on 12 December 1995.

The constitution, which affirms permanent neutrality, was adopted on 18 May 1992, established a president as head of state (controlling legislative, judicial, and executive branches), an elected parliament (the Majlis) and a cabinet of ministers (appointed by the president). The Majlis is made up of representatives from five geographic administrative regions (velayats), each of which is divided into districts (etraps). The People's Council (Khalk Maslakhaty), the supreme representative body, brings together the president, elected members of parliament, the cabinet, senior law officers, and representatives of local government.

Economic background

Since the collapse of the USSR, independent Turkmenistan has struggled to revive its economy and to look for new economic partners. GDP had fallen each year since 1991 (Table 3), with an 18.8% drop in 1994, and a drop of 15% in 1997 (25% according to World Bank estimates) (*7*). The economy began to show some signs of improvement later in 1997. GDP grew in 1998 by 5% (*8*) and is projected to grow by 10% in 1999 (*9*), largely because of gas exports.

Inflation has soared to triple digit figures since independence. GDP per capita, in US dollars and in terms of real purchasing power, fell from US $4230 PPP in 1990 to US $2345 PPP in 1995. The government struggled to match inflation and rising costs of living with wage increases in 1996 and 1997 with limited success. Reliable and systematic official socioeconomic data are lacking, however, with different estimates given by different sources.

Government expenditure, having dropped below 20% of GDP following the downturn in the economy and the loss of budget subsidies from Moscow, reached a low in 1994, but has been steadily increasing since. The registered unemployed comprise nearly one third of the workforce and this is likely to be an underestimate. Technically, 48% of the population live in absolute poverty; due to the free provision of housing and related utilities, and the heavy subsidies

Table 3. Macroeconomic indicators

Indicators	1990	1991	1992	1993	1994	1995	1996	1997
GDP growth rate, % change[a]	2.0	-4.7	-5.3	-10.0	-18.8	-8.2	-3.0	-15.0
Annual inflation rate, %[b]	–	112	770	1 631	2 710	920	–	–
GDP per capita, US$[c]	–	–	–	1 191	552	562	417	390*
GDP PPP $ per capita[b]	4 230	3 540	3 400	3 128	3 469	2 345	1 509[e]	-
Gross industrial output, % change[a]	–	4.8	-14.9	5.4	-25.0	-7.0	18.0	–
Share of agricultural sector, % of GDP[a]	–	46.0	19.0	11.5	9.0	30.3	17.5	–
Government expenditure, % GDP[c]	–	38.2	42.2	19.2	10.4	12.5	16.9	29.2*
Registered unemployment rate, %[d]	–	0	0	20	20	27	28	–
Real wages[a]	–	–	–	100	52.9	24.8	20.2	30.9

Source: [a] UNICEF, the MONEE Project, TransMONEE database 1998; [b] WHO Regional Office for Europe health for all database; [c] European Bank for Reconstruction and Development, Transition Report 1998; [d] UNDP, Turkmenistan; Human Development Report 1997; [e] World Bank, Profile of human development in Europe and central Asia region 1998.

* Estimate

on basic dietary staples, the actual situation is somewhat better than these figures might suggest (*7*). The socioeconomic status of the half of the population who live in rural areas is of particular concern. The World Bank states that some 85% of the population have access to safe water (*10*); however, sources within Turkmenistan suggest that the true figure is considerably lower. There is also a large informal economy but its precise extent is unknown.

Turkmenistan has privatized some of its state enterprises and is encouraging foreign investment in order to develop its economy. Privatization is concentrated amongst smaller enterprises and in the retail and service sectors. Whilst 81% of the 32 164 enterprises registered in Turkmenistan in 1997 were outside the public sector, they are only estimated to contribute one quarter of GDP (*12*). The new national currency, the manat, was introduced in 1993. The Majlis passed the Civil Code and the Law of Foreign Investment to provide a legal foundation for privatization and for foreign investment. Turkmenistan and the European Union have agreed to start economic and political collaboration aimed at creating more favourable conditions for international trade. In 1997, taxation accounted for 21.1% of GDP (*12*). Wage income is only a small proportion of GDP (*18,11*).

The country has plentiful natural resources such as oil and gas but lacks capital for exploration and production. Exports include natural gas, oil, cotton (among the top ten world producers), electricity and textiles, although total exports dropped by 55% between 1996 and 1997. Agriculture contributes about 20% to the GDP, industry about 44% and other sectors about 36% (*12*). Of 2.34 million workers in 1996, 44% are employed in agriculture and forestry, and 19% in the industrial and construction sectors (*1*). The major part of the state budget accrues from the sale of natural resources especially gas. These resources, for the most part, remain in state ownership.

Turkmenistan developed a cotton monoculture during the Soviet years, with most of the irrigated land used to grow cotton, and with wheat imported from the Ukraine and Russia. Current agricultural reforms aim to increase grain and cattle production in order to improve self-sufficiency. Agricultural gross output was estimated to increase by 14% in 1997 after a 1996 decrease of 49% (*12*).

Industrial output has dropped. In 1994, after the Russian Federation shut the pipeline used by Turkmenistan to transport its gas to western Europe, industrial gross output fell by 25%. Gas exports were suspended completely in 1997 due to the lack of an export market in the former USSR and payment defaults. Industrial output, therefore, dropped by 20% in 1997, with a consequent decline in its share of GDP from 63% to 39% (*12,13*). Non-payment for gas exports has had a significant impact upon gas production and on the economy

as a whole. Estimates of external debt vary from around US $1.4 billion (thousand million) to US $2.5 billion, in either case a substantial proportion of national wealth. A new gas pipeline to Iran has recently come on stream. There are also plans for a Trans-Caspian Gas Pipeline, through Azerbaijan to Turkey, with the potential for future onward exports to Europe. It is hoped that these pipelines, along with new infrastructure for the export of electricity, will serve to stabilize and strengthen the economy in the intermediate term.

Organizational structure and management

Organizational structure of the health care system

Government administration

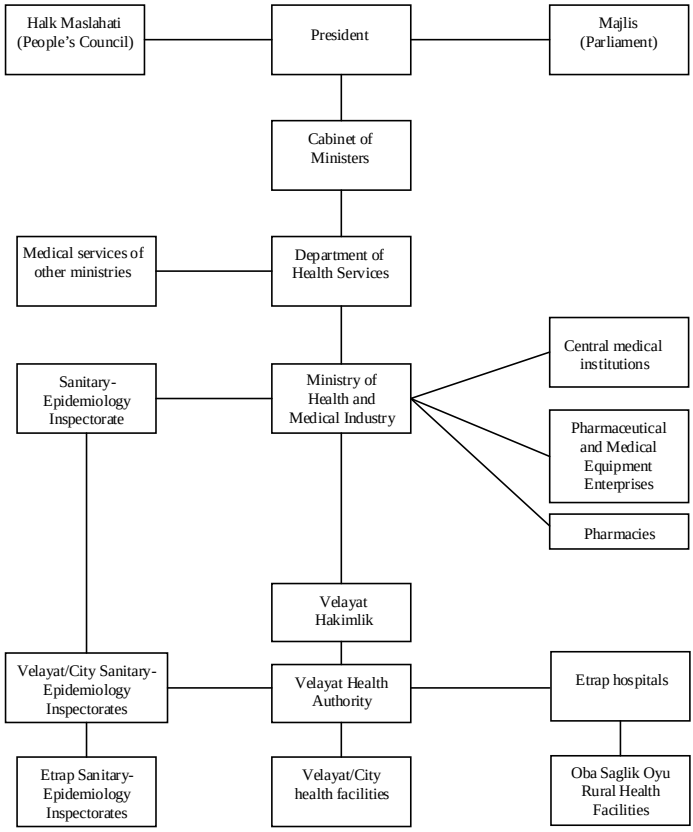
Turkmenistan adopted a new, post-soviet, constitution on 18 May 1992 and established the President both as head of state and head of the executive and administrative body: the Cabinet of Ministers. The first presidential election was held on 21 June 1992 and S. A. Niyazov was elected as President of Turkmenistan with 99.5% of the popular vote. His term has been subsequently extended until 2002. The Majlis (parliament), with 50 members, has a five-year term. The Khalk Maslakhaty (People's Council) is the ultimate representative body, which meets at least once a year. There is universal suffrage over 18 years of age and the next election is due in 2002. The Democratic Party of Turkmenistan is the only official political party.

The President appoints and chairs the Cabinet of Ministers (which does not necessarily include the heads of the major ministerial departments within the government). Central government functions are managed by vice-premiers within the cabinet.

The President is the statutory head of the legislative, judiciary, and executive branches of government. The advisory group on health in the Cabinet of Ministers monitors developments and gives advice to the vice-premier with responsibility for health. The Cabinet of Ministers technically has the responsibility for the development of health policy and its implementation. It also plays an essential role in intersectoral coordination amongst the Ministry of Health and Medical Industry (MOHMI), the Ministry of Economy and Finance, the Ministry of Education, and other relevant organizations and ministries.

The health care system of Turkmenistan is organized on a national basis. Whilst policy making for the health sector comes under the ambit of the Cabinet

Fig. 2 Organizational chart of health care system



of Ministers, the Ministry of Health and Medical Industry is responsible for the actual operation of health services. In each of the country's five velayats (regions), the velayat hakim (provincial governor), a presidential appointee, finances regional health services. The health care facilities of Ashgabat, the capital city, are controlled by the Ashgabat City Health Authority. The head of the city health authority is a deputy minister of health. Whilst organizational accountability of the velayat health services is to the hakimlik (administration), technical accountability is to the health ministry. Each velayat has a large number of health facilities. Each velayat is subdivided into etraps (districts), which also operate hospitals and outpatient institutions (*14*).

The management of health services is mostly undertaken at two levels: the Ministry of Health and Medical Industry and velayat health administrations.

Each velayat health administration reports both to the ministry and to the hakim, the head of the velayat administration, who is appointed by the President. Generally speaking, policy is set at national level and administered locally. The velayat health administrations, in effect, replicate the national structure. The velayat health administration works directly to one of the hakim's deputies, who has responsibility for education and health. The city health administrations have been abolished with the exception of the Ashgabat city health administration in 1997. The head of the Ashgabat city health administration is one of the deputy ministers of health. At the level of etrap, the director of the central etrap hospital is responsible for the health services (including primary health care) and is the budget holder. They are accountable to their local velayat health administration.

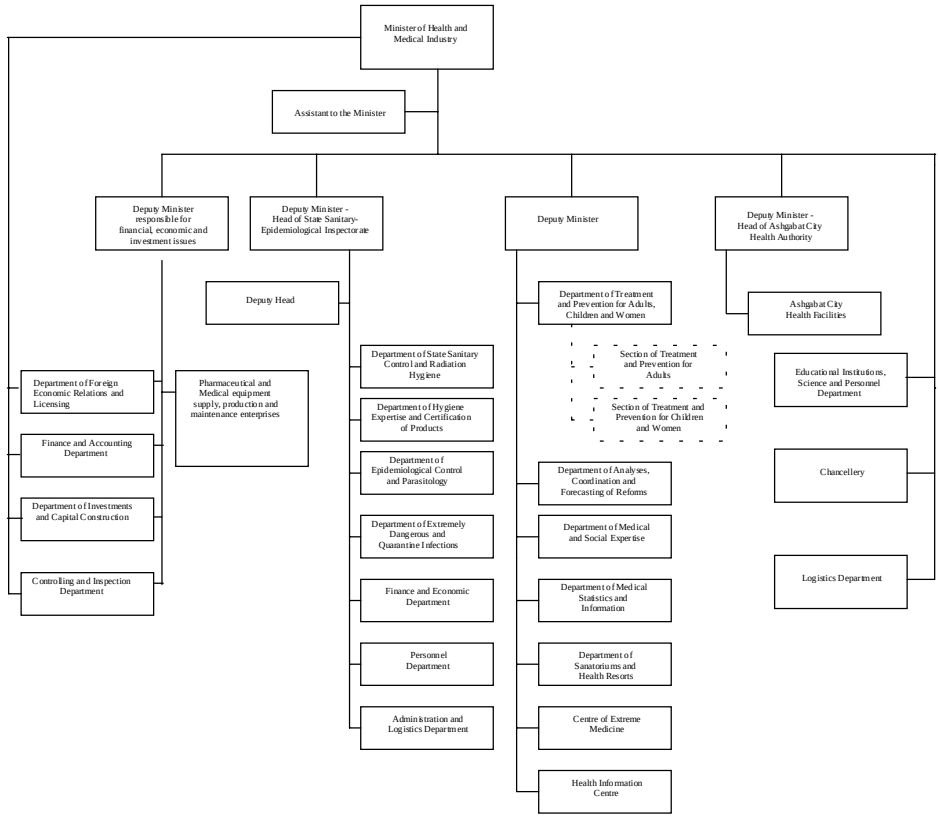
Ministry of Health and Medical Industry

The remit of the health ministry includes: preparation of health legislation; elaboration and implementation of health care reforms; health research; education and workforce planning issues; development and realization of prevention and care programmes and activities related to the medical device and pharmaceutical industries. It deals with environmental health issues, plans the health care budget and monitors the health status of the population. The Ministry of Health and Medical Industry has extended its control of health facilities since 1995 when some hospitals, formerly under the control of other ministries, were brought under its control. Central institutions, often tertiary units with both clinical and research functions, that were previously directly linked to the Cabinet of Ministers were brought under the control of the Ministry of Health and Medical Industry both managerially and financially. Decision-making is still highly centralized and bureaucratic. Whilst there are information systems to assist in the management function, they are rather better at assembling data centrally for national planning than at providing information to aid decision making at local level.

The current organizational structure of the Ministry of Health and Medical Industry includes four deputy ministers. Each deputy minister has specific responsibility for different parts of the health sector, both in terms of managerial and operational supervision. They have direct contact with the minister and provide an interface between policy and operational issues. This model is less hierarchical than the previous structure but, by having the health sector divided amongst four deputy ministers, it can potentially lead to divergence of activity among departments and make it more difficult to integrate within a single policy stream. The organizational structure of the health ministry has been revised several times over past few years in parallel with the process of health care

reform. Whilst part of the rationale for these reorganizations was to strengthen local decision making, this does not appear to have been delivered in reality. The changes include the incorporation of activities at the interface of medical and social care from the Ministry of Social Welfare. This extends the scope and the responsibility of the Ministry. The structure of the Ministry of Health and Medical Industry is laid out in Fig. 3.

Fig. 3. Organizational chart of Ministry of Health and Medical Industry



Other Ministries

The Ministry of Health and Medical Industry is responsible for health policy and the provision of health care for the whole population. The Ministry of Defense, Ministry of Internal Affairs, National Security Services, National Border Service, national airlines and airport services also provide parallel health services for their personnel and families and operate their own health care institutions. Each of these ministries has its own health department. Before August 1995, there were more such ministries, (for example, the Ministry of

Railways) which had their own health care facilities. Now, all of these institutions are subordinate to the health ministry. However, they continue to be financed through the other ministries.

Ministry of Economy and Finance

The Ministry of Economy and Finance determines the overall health sector budget and sets accounting norms and health sector staffing levels. It is responsible for resource allocation amongst velayats (regions), monies are disbursed directly from the Ministry of Economy and Finance to the velayat administrations and to the Ministry of Health and Medical Industry for funding central institutions. The Ministry of Economy and Finance is also involved in identification and approval of prices for fees-for-services for health-related activities, an expanding role.

Ministry of Education

The Ministry of Education oversees education policy in general. Medical schools are part of its responsibility, and clinical elements of courses are planned and delivered in partnership with the Ministry of Health and Medical Industry. It has a significant role in health education. Health education has been part of the curriculum of primary schools since 1996.

Ministry of Social Welfare

The Ministry of Social Welfare is responsible for social welfare, social security, the care of the elderly, of people with disabilities, of low-income families, and of other vulnerable groups. The Ministry sets national pay scales and the various incentive payments for certain types of work.

Ministry of Justice

The Ministry of Justice is involved in the process of development and approval of the legislative base for the health care system.

Voluntary sector

The voluntary sector is relatively underdeveloped in Turkmenistan. A recent report by the United States Agency for International Development (*15*), however, noted some growth on previous years with 117 NGOs in Turkmenistan by the end of 1998.

General public

Public involvement is rudimentary and service users are not actively involved in decision-making processes for the health care system. The Organization for Patients' Rights, however, was established in 1998. Its stated aim is to safeguard the interests of patients through a variety of means. It has not yet completed its registration with the ministry of justice, and is thus not yet officially recognized.

Private sector/providers

The private sector is a very small part of overall health service provision. There is one private hospital with 35 beds (which opened in 1999) and a few private pharmacies run by joint ventures. The sector is expanding and the current policy is to increase the degree of private provision of health services.

Certain areas of practice are funded privately through user charges but provided in public sector institutions. These include some types of dental treatment, treatment of foreigners, diagnostic tests and pharmaceuticals. Private finance is encouraged for low priority interventions. The role of the private sector in provision will increase, providing either medical or non-medical services. It has been suggested that private companies could provide laboratory services on a contract basis in public hospitals along similar lines to catering, which has already been contracted out.

Professional groups

Health professionals are represented through two types of organizations. The trade union for medical personnel, which is based upon the old Soviet trade union model, retains much of its previous power and status. There are also specialist societies that represent the main specialties such as cardiology and surgery.

Planning, regulation and management

The constitution of Turkmenistan adopted in 1992 provides the framework for the rights of the citizens and activities in the country. The health care system is regulated by laws, presidential decrees and decrees of the Ministry of Health and Medical Industry, in accordance with the constitution.

Health policy is formed by the Cabinet of Ministers led by the President of Turkmenistan. The Ministry of Health and Medical Industry is responsible for implementation of policy within the health care system. Legislative drafts related to health care are developed by the Ministry of Health and Medical Industry and are then submitted to the Cabinet of Ministers, which makes amendments as required. The Ministry of Justice also has a key role in the drafting of laws.

Decision-making processes are very centralized and local managers, for the most part, are responsible for the implementation of decisions taken at higher levels.

The executive functions of the health ministry are complicated by the fact that it does not allocate financial resources: this is a function of the Ministry of Economy and Finance, which allocates overall budgets to each velayat. The Ministry of Health and Medical Industry finances central (national) health care institutions. The hakimlik in each velayat finances local health services, and receives funding from the ministry of economy and finance. The Ministry of Health and Medical Industry oversees the provision of health services through velayat health administrations. Capital investment decisions are made by the Cabinet of Ministers and the Ministry of Health and Medical Industry, which is responsible for the construction of central medical institutions. Velayat health administrations are responsible for the construction of velayat medical institutions. Statistical data collected by the Ministry of Health and Medical Industry and the National Institute of Statistics and Forecasts are used to inform planning decisions.

Decentralization of the health care system

Turkmenistan's economic policy has been directed at the formulation of its own model of economic development. The step-by-step transition to a market economy was planned to take into account sociocultural factors. Transition to a market economy is not seen as a goal of economic development but an important means of raising the living standards of the population. As a consequence, in the formation of public policies for commodity prices, decentralization and privatization, change proceeds at a more deliberate pace.

The management of the health system continues to be bureaucratic and hierarchical. As during the soviet period, norms continue to determine decisions on the establishment of new facilities, on staffing levels, budgeting and the like. Although these norms are no longer followed quite so strictly as in the past, they tend to restrict flexibility at local level. This means that management

decisions are, for the most part made centrally rather than locally, with the maintenance of the status quo being the priority, rather than local service development and innovation. This results in the health care system being administered rather than managed. There is little involvement of the community in the management of health services.

The February 1992 law "On switching from state to private property", after some amendment, was adopted by the Majlis in October 1993. There are precise definitions for "distributing state property" and "privatization", and the means and the mechanisms are identified. "On enterprises", also adopted in October 1993, determines the legal, economic and social conditions for establishment, activity, reorganization and dissolution for all forms of property (*16*). The Presidential health programme (*17*) envisages privatization being the first step in allowing the provision of services in private facilities, both in and out-of-hours. Since 1 January 1996, doctors have been allowed to rent premises in clinics and hospitals. Private dentistry has been legalized and the private provision of pharmacy services is under development. Private health care provision is permitted in public facilities. Since 1 March 1996 private pharmacies have been established and licensed through the Ministry of Health and Medical Industry department of pharmacy and the local hakim (*18*). Licensing of private medicine is the responsibility of the Department of External and Economic Relations

The Ministry of Health and Medical Industry is permitted to establish self-financed medical institutions or departments and to set for them norms and criteria. In Turkmenistan, the term "self-financing" is used for hospitals and hospital units, which receive remuneration either from the patient or a third party payer. The term is misleading to a certain extent, since the remuneration may be partial and calculated only on basis of, for instance, running costs and not investment costs, and thus constitute only a minor part of the real cost of the hospital.

Currently Turkmenistan has a few fully self-financed institutions including the International Medical Centre, a modern cardiology hospital equipped with sophisticated equipment from Germany, Japan and the USA, which was established in June 1998. Its staff was retrained in Germany. Special self-financing units have also been established in hospitals and departments dealing with dermato-venereology.

Health care finance and expenditure

Main system of finance and coverage

The Turkmenistan health care system is mainly funded from national government revenues. Until 1991, there was only one source of finance: the central budget. A voluntary medical insurance scheme was introduced in 1996. This contributed about 7% of total health expenditures in 1997. The state budget is still the main source of funding (about 90%). State revenues are mainly derived from natural resources and taxation. Taxes are collected nationally and locally. National taxes (such as income tax, value-added tax, excise duty and the natural resource taxes) are collected by the central government, and the revenue is distributed to velayat governments and the Ashgabat municipality. In addition, the local authorities levy their own taxes (as defined in Article 13 of the Law of Local Government of Turkmenistan). In addition to the budgeted allocation, the President may allocate extra monies to the health sector, usually for pharmaceuticals and medical equipment particularly in tertiary level institutions (*19*).

Table 4. Main sources of finance (%), 1990–1997

	1990	1991	1992	1993	1994	1995	1996	1997
State Budget	100.0	100	100	100	100	100	91	74.5
State voluntary medical insurance	na	–	–	–	–	–	6	6.5
Fees for services	na	–	–	–	–	–	–	0.4
Credit	–	–	–	–	–	–	–	–
Clearing[a]	–	–	–	–	–	–	–	18.6
Humanitarian assistance	–	–	–	–	–	–	–	–

Source: Ministry of Health and Medical Industry.
Note: [a] Clearing for gas export debt.

The state budget is considering other means of obtaining finance for health care. Discussions have included introduction of statutory health care insurance and the extension of user charges.

Complementary sources of finance

State Fund for Health Development

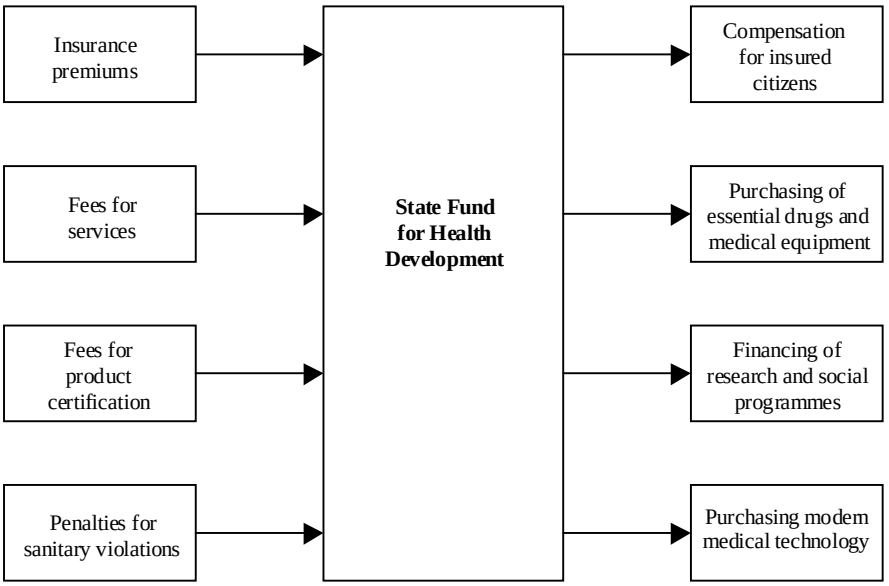
The State Fund for Health Development was established in March 1998 to facilitate the further development of the health sector and medical industry and to improve the supply of pharmaceuticals. It collects and disburses health funds with the exception of those derived from the state budget. The President is the head of the council responsible for finance and control of fund activities. The Minister of Health is executive director of the fund council. The fund, therefore, come under direct presidential and ministerial control, and is not accountable to parliament. Sources of funds for the fund for health development are as follows:

- state voluntary medical insurance premiums
- surpluses from self-financed enterprises and medical facilities
- 30% of fees for services provided by medical institutions
- fees for hygiene certifications
- environmental health fines
- charges for state licensing of medical and pharmaceutical activities
- fees for registration and re-registration of medical supplies
- income from investments in health and pharmaceutical projects
- 50% of funds from privatization of medical and pharmaceutical institutions
- voluntary donations
- other sources.

Monies from the state fund are disbursed in a variety of ways. Expenditure from the fund includes the following items:

- compensation for insured citizens
- purchasing essential drugs and medical equipment
- finance of major research, social programmes and the pharmaceutical industry
- financial incentives for medical institutions
- purchasing medical technology.

Fig. 4. Fund for health development activities



Out-of-pocket payments

Fees for services have been introduced incrementally since independence. The list of services for which a fee is levied is determined by the Ministry of Health and Medical Industry. Prices, as well as the means of collection, are approved by the Ministry of Economy and Finance. Official user charges apply to all pharmaceuticals prescribed for outpatients unless one is covered under the voluntary state health insurance scheme or otherwise exempt. In 1998 the list of services for which a fee is payable was extended, and currently includes self-referred patients, a limited range of diagnostic procedures and consultations, cosmetic surgery, dental care and the physical therapies. Fees for those not exempt or insured vary: an ultrasound examination may cost 20 000 manats (approximately 10% of a basic annual wage), and a consultation with a specialist 8000 manats.

Veterans, some groups of disabled people, people affected by explosion of the Chernobyl atomic station, pregnant women, children under one year and patients with diabetes, asthma, cancer, mental illness, kidney transplants, tuberculosis, syphilis, AIDS and leprosy have free access to all health services.

War veterans, pensioners who are in receipt of special pensions, some groups of disabled people have the right to purchase drugs for outpatient treatment at a 50% discount.

Collected fees are taxed. After tax, they are distributed thus:

- 30% of local currency fees go to the fund for health development. The remaining 70% is kept by the provider.
- If it is in foreign currency (mainly paid by foreigners and quite marginal), the whole amount goes to the fund for health development. Half the amount is returned to the institution in local currency.
- 100% of the sanitary epidemiology inspectorate income (penalties, fees for certification) goes to the fund for health development from where it is used for purchasing vaccines and medical equipment for the Sanitary Epidemiology Inspectorate. It is unclear why these functions (and the revenue and expenditure) are not managed within the inspectorate.

It is expected that additional funds for health services will continue to be generated from user charges, which will be extended to services that are not covered in the package of priority health services. Pay-beds will be established in hospitals for those who are willing to pay for better hotel services; however, the quality of medical services will be the same as for other patients.

Informal payments

Informal payments are widespread but difficult to quantify. A recent social assessment study (*20*) found that over 50% of people interviewed had made under-the-table payments for medical care. The same study found that whilst respondents often understood and were sympathetic with the reasons for informal charges (i.e. low wages of health workers), the fact that health services were officially free was considered one of its most positive aspects. Although these unofficial contributions are not re-invested into the health system to increase the level of financing, they are important as salary supplements for low-waged medical professionals.

Voluntary health insurance

Since 1 January 1996, state voluntary medical insurance has been available (private insurance is not currently allowed in Turkmenistan). The Ministry of Health and Medical Industry is responsible for providing health care coverage to the insured population. Premiums are collected by the Ministry of Economy and Finance, who then transfers these funds to the Ministry of Health and Medical Industry. Since March 1998, the insurance-derived funds have been taken into the State Fund for Health Development, which is kept separate from state-derived health care budgets. Should insurance funds be insufficient to cover the Ministry of Health and Medical Industry expenditure for insured, the

Ministry of Economy and Finance transfers additional sums from the state budget.

State voluntary medical insurance coverage is about 90% (1999). It is generally higher amongst public sector workers, for whom it is greatly encouraged. Almost one third of the population are entitled to be members of the voluntary medical insurance scheme, the rest being their dependants including children under fifteen years old, and spouses of the insured. Active workers, the retired and students have to obtain medical insurance if they want to benefit from services offered through the insurance scheme.

The insured population enjoys the following benefits: only 10% co-payment for outpatient drugs; 30% discount on for fee treatment in state units; choice of family physician; and hospital admission within one week of referral from ambulatory centres. On the other hand, the non-insured have to pay the full cost of outpatient prescriptions and dental treatment and have no right to choose their family physician. They do not, however, pay for hospital treatment, although they may have longer waiting times for non-urgent treatment. With inpatient care free at the point of use, and co-payment for ambulatory care amongst the uninsured, there is a perverse incentive that may serve to increase inpatient utilization and overall cost. Local sources state the waiting times for the uninsured as in excess of seven days; the insured population get immediate attention.

Other regulations grant exemption for some groups, such as war veterans, from 50% or 100% of certain fees and charges. There is no income threshold for exemption from fees for the uninsured and no provision for the non-contributing parts of the population.

Premiums for medical insurance are 4% of income, pension or stipends. They are directly deducted by employers from the salary of the person who holds a medical insurance card and transferred to the Ministry of Economy and Finance account. There is no employers' contribution. The premium is deducted at a single rate for all subscribers.

A deduction of 4% is considered optimal because salaries are low, and the insured have a large number of dependants. Collection of premiums is difficult because widespread delay in payment of salaries causes problems in premium collection. Money raised from voluntary medical insurance has to cover the full cost of outpatient prescriptions. For this reason, there are particular issues with regard to the collection of contributions. This, coupled with an increased demand for pharmaceuticals which has led to cost-escalation, has placed considerable financial strain on the scheme which must urgently be addressed to make it financially sustainable. Health insurance premiums in 1997 amounted to 7% of the state health budget, as shown earlier in Table 4. Voluntary medical

Table 5. Coverage of the population with state voluntary medical insurance, in thousands (1998)

Velayat	Total population	Insured population	Dependants	%
Ashgabat	534.4	273.1	56.2	99.8
Akhal	695.5	243.3	291.7	84.1
Balkan	383.0	140 .3	167.2	84.8
Dashkhovus	997.0	304.8	356.4	78.1
Lebap	959.7	325.7	415.9	71.5
Mary	1 071.5	315.0	403.0	64.9
Total	**4 641.1**	**1 602.0**	**1 690.4**	**78.1**

Source: Ministry of Health and Medical Industry.

insurance should continue to generate additional funds for health services although some believe that revenue from it will be considerably less than anticipated (*21*). For this reason, the introduction of compulsory health insurance is under consideration. This has aroused much debate and a law on compulsory health insurance has been drafted but not approved.

Other sources

Since independence, additional funding for health services has been made available in the form of grants and loans. Grants are usually in kind, like provision of pharmaceuticals, equipment, computers, in-country and overseas training, and technical assistance. Credits are mostly used for construction and procurement of pharmaceuticals, medical equipment and medical supplies. Additional sources, which constitute only small part of health care expenditure are donations, licensing of pharmaceuticals and a collective fund in rural areas. Private sector provision and income generated in public health facilities remains small. The role of grants and loans from international agencies in the funding of health care remains unclear.

Health care benefits and rationing

Presidential decree 2297 on 22 July 1995 lists services to be provided free of charge in state health care institutions. This list covered almost all health care. There was no mention of paid or co-paid services. In March 1996, the government issued an updated list of medical services guaranteed to Turkmen citizens to be provided free of charge at state health care institutions, as follows:

1. Emergency medical treatment
2. Home visits for patients unable to attend health care institutions

3. Outpatient services and disease prevention activities, including:
   - treatment of acute illnesses and exacerbations of chronic diseases
   - injuries, poisoning and accidents
   - home delivery
   - antenatal treatment
   - family planning services including supply of contraception
   - prevention related dispensing and examination
   - epidemic prevention including vaccination.
4. Inpatient care, including:
   - treatment of acute and chronic diseases
   - injuries, poisoning and accidents
   - obstetrics
   - delivery and care of newborn babies
   - treatment of infectious diseases.
5. Specialized care, including oncology, dermatology, venereal disease, psychiatry, endocrinology, tuberculosis, drug and alcohol-related diseases, and leprosy
6. Dentistry care
7. Sanatorium care
8. Health care services at children's homes
9. Sanitary aviation services. (emergency transfer of specialists to remote locations)
10. Medical care in extreme cases, such as catastrophes, natural disasters, and epidemics.

Services excluded from the list are some laboratory tests, dental prostheses, contact lenses and spectacles, and cosmetic surgery.

The point to note about the government's list is that it is not a minimum or basic package of services; it simply guarantees government funding of all currently promised services. There has been no change in the coverage in terms of population groups; some restrictions in the services provided free of charge are being introduced, however. It has been suggested that, in order to meet the needs of the population, government spending needs to be directed towards priority areas using epidemiological and economic information, and involving Ministry of Health and Medical Industry officials, health professionals and users of health services (*22*).

Health care expenditure

Health sector spending fell from 3.2% of GDP in 1991 to 0.8% in 1994, increasing to 1.5% of GDP in 1995 and 4.6% in 1997, as the performance of the economy has improved (table 6). Turkmenistan devotes less of its GDP to the health sector, however, than several of its central Asian neighbours; and considerably less than OECD countries where the average spend is 8.4% of GDP (Fig. 5). The target of the Presidential Health Programme is to increase the share of health expenditure in GNP to 5.5% by the year 2000 (*19*).

In 1996, per capita health expenditure, including state budget and voluntary health insurance, was US $13.5. If expenditure on health through barters and credits are included, then per capita health expenditure went up to US $21 in 1996 (*19*). It is unclear whether this pricing is in actual or purchasing power parity dollars and comparative data for other years is not available.

Fig. 6 lacks data for Turkmenistan after 1993 and thus does not show the trends in proportion of GDP devoted to health care for the more recent years. Official sources in Turkmenistan show the proportion of GDP devoted to health care to be 1.4% for 1994, 2.8% for 1995 and 3.5% for 1996. Examination of the data from Table 6, however, suggests a similar pattern to Kazakhstan, but at a higher level. This data should be treated with caution, coming as it does from a variety of sources.

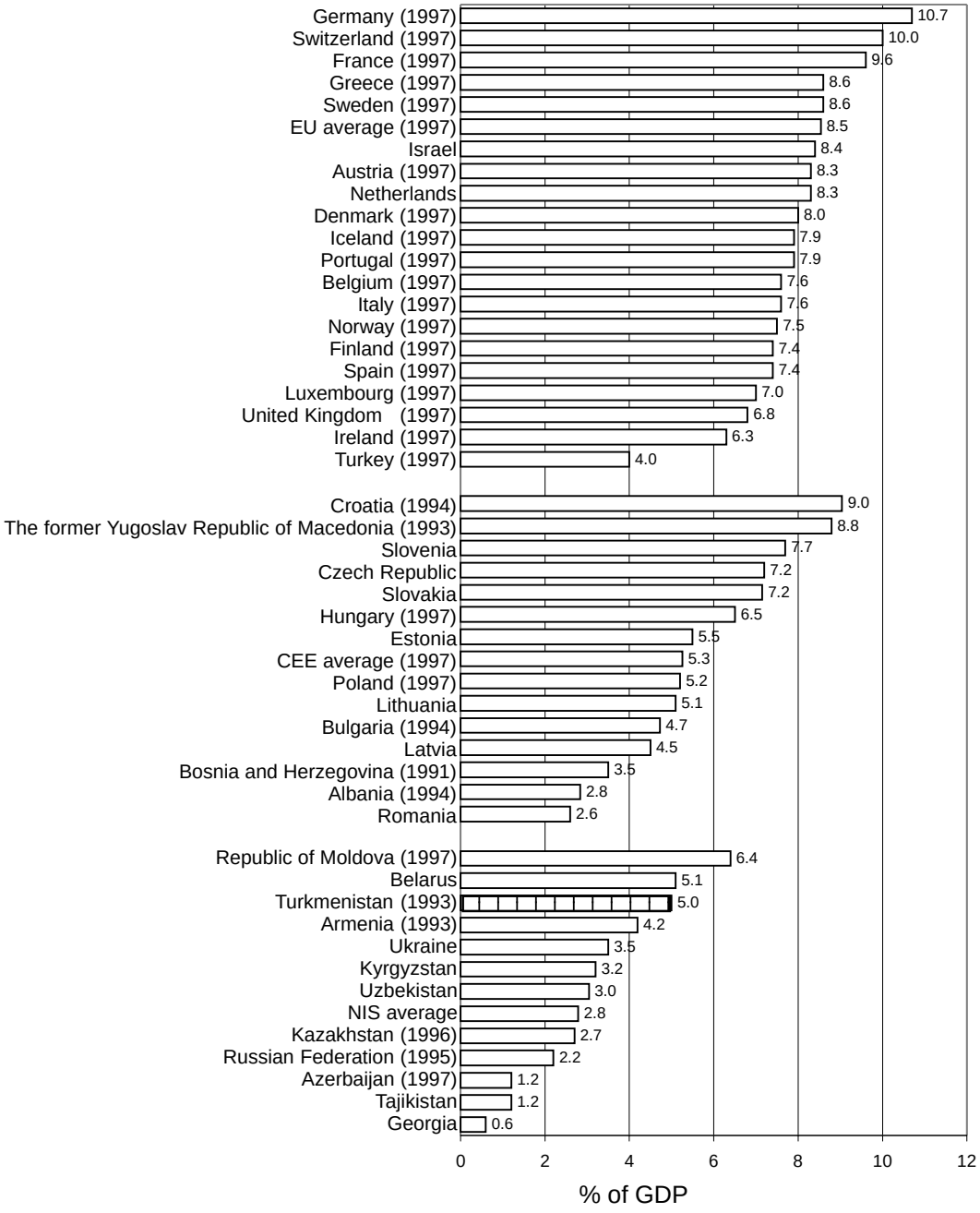
Data obtained directly from the health ministry shows the public sector contribution for Turkmenistan in 1997 to be 74.5% of total health care expenditure. This is significantly lower than other central Asian republics and on a par with many OECD countries.

Table 6. Trends in health care expenditure, 1991–1997

	1991	1992	1993	1994	1995	1996	1997
Value in current prices (million manat)[a]	–	–	–	1 560	11 963	175 300	443 082
Value in 1991 prices (thousand manat)[b]	1087.79	572.26	507.76	220.52	321.94	–	–
Health expenditure as % of state budget[b]	5.4	3.1	8.4	10.7	7.7	-	13.9[c]
Share of GDP (%)[b]	3.2	1.8	1.7	0.8	1.46	2.3[a]	4.6[a]
Public as share of total expenditure on health care (%)[b]	100	100	100	100	100	–	74.5[c]

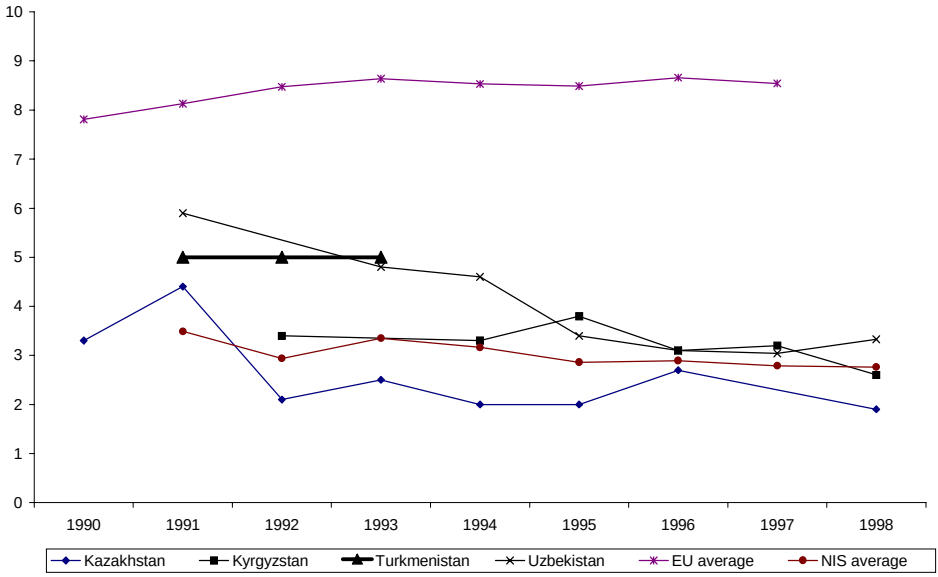
Source: [a] International Monetary Fund, Turkmenistan: recent economic developments; [b] World Bank, Technical paper No. 348 1996; [c] Ministry of Health and Medical Industry.

Fig. 5. Total expenditure on health as a % of GDP in the WHO European Region, 1998 (or latest year)



Source: WHO Regional Office for Europe health for all database.

Fig. 6. Trends in health expenditure as a % of GDP in Turkmenistan and selected countries, 1990–1998

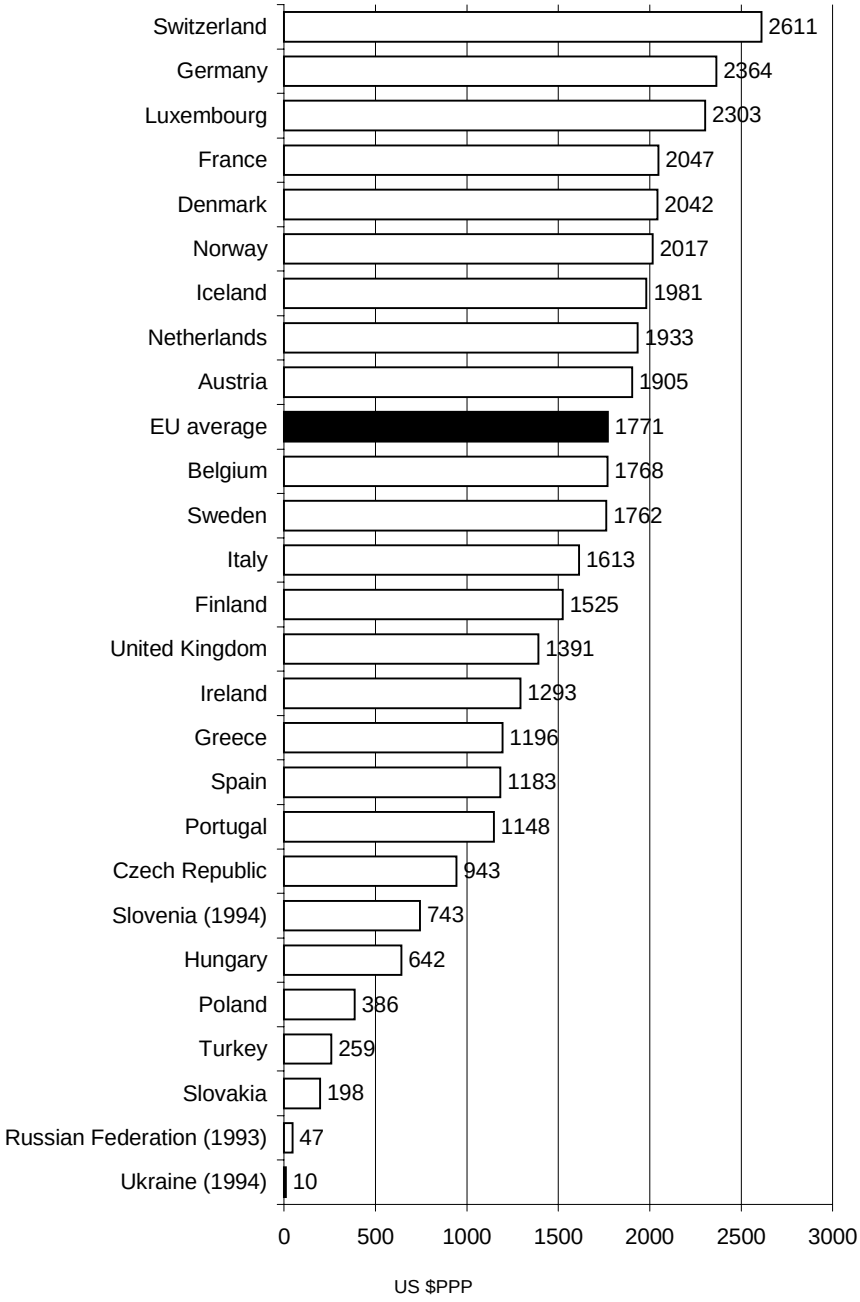


Source: WHO Regional Office for Europe health for all database.

Table 7 appears to show an increasing trend in the proportion of the budget devoted to pharmaceuticals. This is to be expected in the context of the broader economy and the relatively high prices that have been paid for pharmaceuticals in barter for gas trade deals. Total expenditure on pharmaceuticals declined sharply between 1991 and 1995 (*23*). Salaries remain the largest part of health expenditure, although their contribution has declined. This may be partly due to the halving in real terms of average wages between 1993 and 1994 (*23*) and partly due to relatively steady capital expenditure. This steady, relatively high level of capital expenditure is interesting. In other central Asian republics, capital expenditure has declined markedly. Data for the years after 1995, although unavailable at the time of writing, may show a similar trend, although anecdotal reports are of a continuing capital programme.

Capital investments are funded by the state budget. Recently, however, foreign credit seems to become an important source of capital investments. Decision on capital investment is made at the national level. The Ministry of Health and Medical industry, Ministry of Economy and Finance and Cabinet

Fig. 7. Health care expenditure in US $PPP per capita in the WHO European Region, 1997 (or latest available year)



Source: WHO Regional Office for Europe health for all database.

Table 7. Health care expenditure by category, (%) of total expenditure on health care

	1991	1992	1993	1994	1995	1996	1997
In-Patient care (%)[a]	75	75	75	–	–	–	–
Pharmaceuticals (%)	6	4	7	6	17	–	18[c]
Salaries (%)[b]	46.8	51.1	55.1	49.7	33.2	–	39.1[c]
Energy/utilities (%)	25.7	12.2	8.8	10.4	18.9	–	–
Maintenance (%)[b]	6.0	10.3	5.2	5.6	1.3	–	2.5[c]
Capital Expenditure (%)[b]	8	13	12	15	16	–	–

Source: [a] WHO Regional Office for Europe, health for all database; [b] World Bank, Technical paper No. 348 1996; [c] Ministry of Health and Medical industry.

of Ministers take part in decisions. It also needs to be noted that almost 40% of the Ashgabat municipal health budget was spent on capital investments in 1994, while capital investment in Akhal velayat accounted for 18.4%. These figures represent a surprisingly high level of expenditure compared with other central Asian republics and may reflect differences in accounting procedures. Nevertheless, there is considerable inter-velayat disparity (*24*).

Health care delivery system

As in other countries of the former Soviet Union, the basic organizational structure of the health care system (detailed below) follows the standard model set down in soviet times. Reforms in recent years, however, have yielded some changes.

Primary care and public health services

Primary care facilities in Turkmenistan are well distributed around the country and access is said to be good for most of the population. As indicated in Table 8, the proportion of expenditure allocated to public health and primary care appears to have been increasing with corresponding decreases in hospital care expenditure. The paucity of available data, however, makes the analysis of expenditure trends difficult. In addition to this, as separate accounts are not kept by level of health care, division between primary and secondary care may be difficult to interpret.

The organization and management of health services is different in rural and urban areas. In each etrap (district), the director of the etrap hospitals is responsible for both primary health care and hospital services Thus ambulatory centres and rural hospitals are administratively subordinate to the etrap hospital. In the cities, polyclinics are managed by their chief physicians and have no

Table 8. Health expenditure by level, 1990–1997

	1990[a]	1991	1992	1993[b]	1994[b]	1995	1996	1997[a]
Primary health care (%)	5.8	–	–	–	–	–	–	15.8
Hospital care (%)	87	–	–	66	61	–	–	63
Public health (%)	1	–	–	5	2	–	–	3

Source: [a] Ministry of Health and Medical industry; [b] World Bank, Technical paper No. 348 1996.

administrative links with hospitals. It should be noted at this point that primary care facilities are often very dilapidated, and in need of significant investment in building stock and in modern equipment.

In rural areas, rural health centres[2] (oba saglyk oyu) level 1 are the main facilities involved in the provision of primary health care. The rural health centres level one are the most peripheral outpatient health facilities, and they are usually staffed with a feldsher and a midwife, sometimes a feldsher-midwife, or a nurse. The feldsher examines and treats minor disease and prescribes drugs such as analgesics and antibiotics. Each rural health centre level 1 serves a 1000–1500 population. Physicians from rural health centres level 2 visit rural health centres level 1 according to a schedule or where requested by the staff.

The rural health centres level 2 are the main units for medical service delivery in rural areas. Traditionally they are staffed with pediatricians, therapeutists, obstetrician-gynecologists and dentists as well as with other health care personnel including family nurses and auxiliary staff. Each rural health centre level 2 provides outpatient care to eight to ten thousand population. Increasingly, they are being staffed with family physicians.

Rural hospitals are small, typically with 25 beds. Although they are organized as hospitals, they are neither equipped nor staffed for sophisticated secondary care. These decreased by a third between 1995 and 1996 (Table 12) partly through closure and site rationalization and partly through reclassification as rural health centres level 2.

In theory, decisions on the establishment of new rural health centres level 2 are based on the population size, existing norms and standards. Sometimes, however, economic conditions and political power of the area can also be influential. Rural health centres level 1 are subordinate to rural health centres level 2. Rural hospitals and rural health centres level 2 do not have direct lines of accountability between them; they are both accountable to etrap hospitals.

In urban areas, urban health centres (sakher saglyk oyu) are free-standing outpatient facilities, not attached to hospitals. People are assigned to a family physician (usually a former pediatrician, therapeutist or other specialist doctor) on the basis of catchment areas. In addition to family physicians, several specialist doctors such as cardiologists, neurologists, gastroenterologists and surgeons are included in urban health centre staff.

Due to lack of diagnostic facilities in primary and secondary care institutions, sophisticated diagnostic tests, such as CT scanning, are centrally done by the diagnostic centre in Ashgabat. Diagnostic centres in Mary and Nebitdag cities have also been established. It is planned to open a diagnostic centre in each velayat.

[2] The literal translation of oba saglyk oyu is "rural health house"; however the term health centres was felt to be more understandable to an international audience.

Basic investigations, such as blood counts, are provided locally in health facilities.

Emergency services are delivered by separate emergency centres (in effect, specialized accident and emergency hospitals) in Ashgabat and the velayat centres, while in etraps (districts) they are managed by the etrap hospitals.

Although, health services are delivered within easy reach of population, primary health care in Turkmenistan is not fully integrated and the relationships between primary health care units and specialist services, such as tuberculosis control activities, are weak.

Sanitary epidemiological services (environmental health services), performed by the Sanitary Epidemiology Inspectorate, are separately organized from other primary health care services. At the village level, the level 2 rural health centre staff are not responsible for any public health issues. Sanitary epidemiology inspectorate personnel, although required by regulations, due to lack of resources, do not often make regular visits to rural parts of the country so, in practice, public health and environmental health services weak in these areas.

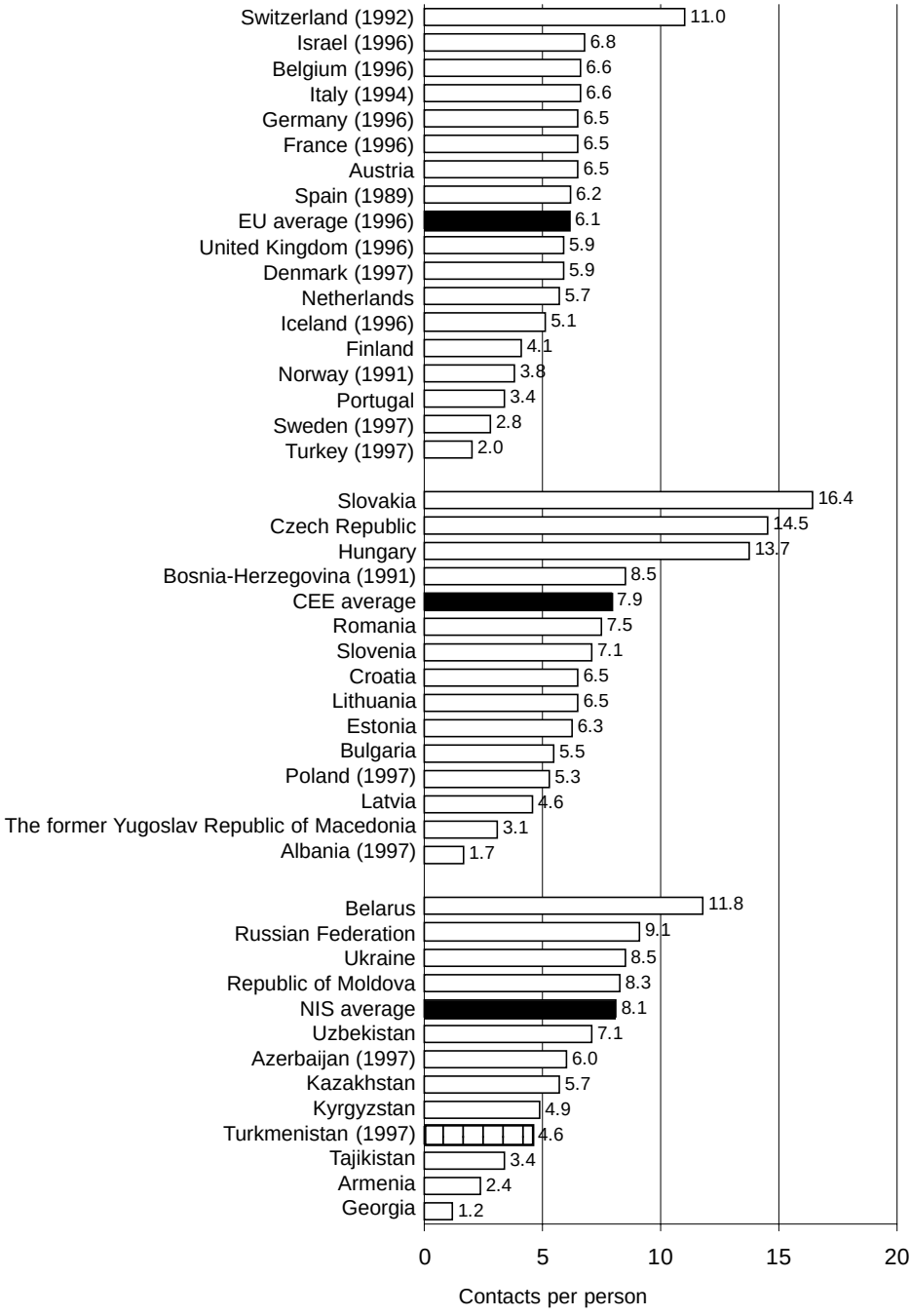
Patients' first ports of call are, in theory, local primary care institutions, which perform a gatekeeper function. When necessary, they will be referred to an etrap hospital or an affiliated hospital in cities. Hospitals do not admit patients directly unless they have been referred, are emergency cases or the patient is willing to pay. Physicians working in rural primary care facilities can refer patients to the etrap hospital with the approval of their chief physician.[3]

Despite the comprehensive infrastructure, the physical and sanitary conditions of rural health centres are often very poor. Many of them do not have running water or toilets in the building. Even basic safety measures such as fire exits are often not present. Urban institutions, especially newly-built ones, are relatively good. In most polyclinics, however, there are not enough consultation rooms for physicians. Few of the rural primary health care units have telephones. In some places, communication is through a radio link that is available only on certain days of the week.

In velayat or city centres, urban health centres refer their patients for inpatient treatment through a physician consultative committee, which considers each case. If the medical service provided by an etrap hospital cannot deal with the case then patients, with the approval of the etrap or city level physician consultative committee, are referred to a velayat hospital. Physicians, thus, do not have the full right of deciding on referral. The government tries to control and minimize the number of unnecessary publicly-funded referrals through physician

[3] These policies are set out in order No: 493 of the Ministry of Health and Medical industry of 30 December 1996.

Fig. 8. Outpatient contacts per person in the WHO European Region, 1998 (or latest available year)



Source: WHO Regional Office for Europe health for all database.

Turkmenistan

consultative committees: the referral rate in the three urban health centres in Ashgabat city were between 1% and 3% in 1995. This rather bureaucratic system may serve to increase the average length of stay. Prior to the formation of the above-mentioned committees, the referral rate was considerably higher. The patients can also be referred to the diagnostic centre in Ashgabat for sophisticated outpatient diagnostic tests. Approximately 85 000 tests for 40 000 patients are done at the centre each year. The centre works on a strict appointment system which is controlled by computer. Generally any treatments needed are given by the physician who referred the patient. In some cases, however, for 3000 out of 40 000 patients, specialists at the centre will perform treatment. Diagnostic services are free of charge for referred patients. Patients who self-refer, however, pay the cost of analysis and treatment (*26*). Patients are responsible for their own transportation costs.

Table 9. Family practice catchment areas, 1998

	Population (in thousands)	Planned family practice catchment areas	Actual family practice catchment areas	% achieved	Population per actual family practice catchment area
Ashgabat	534.4	534	393	73.5	1 359
Ahal	695.5	695	615	88.4	1 157
Balkan	383	383	249	65.0	1 544
Dashkhovus	997	997	818	82.0	1 218
Lebap	959.7	959	939	97.9	1 032
Mary	1 071.5	1 071	953	88.9	1 124
Turkmenistan	4 641.1	4 641	3 967	85.3	1 169.9

Source: Ministry of Health and Medical Industry.

Changes in primary care

During 1996–1997 most of the rural hospitals were changed into outpatient facilities as a part of the health care reforms heralded by the Presidential health programme. According to a Presidential decree, all feldsher-midwife ambulatory posts (FAPs) and rural physician clinics (SVAs) were reclassified as rural health centres in 1998. This has created some confusion and, in order to distinguish between them, they were termed level 1 for former feldsher-midwife ambulatory posts and level 2 for former rural physician clinics. It is expected that, in the longer term, all rural health centres will be staffed with family physicians and provide the same range of services.

In urban areas, polyclinics were renamed urban health centres. They have been rationalized by merging polyclinics for adults and children so as to avoid unnecessary duplication of facilities.

The health care system in Turkmenistan was historically dominated by specialist services both at primary and secondary levels. The introduction of family physicians in primary health care in the stead of specialists has been high on the political agenda since 1995. The Ministry of Health and Medical Industry policy order envisages one family physician per 600 population in 1996. This was revised in 1997 to one family physician per 1000–1500 population. Each family physician should be working with, on average, two family nurses. Staffing levels have been adjusted to reflect this policy. As of 1 September 1998 about 86% of family practice catchment areas was reported to have family physician staff.

The shortage of family physicians in some rural areas has been overcome by the assignment of family feldshers to family practice catchment areas. There is also a policy to retrain specialists as general practitioners. There remain difficulties with the training and retraining of newly-introduced human resources, and the scope of the retraining for existing practitioners remains unclear.

The salaries of family physicians, nurses and feldshers are higher than those of other health professionals and performance of family physicians is reflected in their salaries. The personnel of the primary health care consist of family physicians, pediatricians, specialists, feldshers, family practice nurses, nurses, midwifes, dentist, and auxiliary staff. The main tasks of family physicians are:

- ambulatory treatment and diagnostic services
- preventative services
- periodic medical examination of the population
- emergency services
- health education.

The previous system, based almost entirely on specialist-delivered care makes undergraduate and postgraduate training of family physicians problematic and renders the effective running of a primary health care system based on family medicine difficult.

Patients have the right to choose their family physician from those at the polyclinic in their area (with the approval of the director of the polyclinic). The public, as users of health services, is affected greatly by any changes to the health care system. To investigate this, a social assessment study (*20*) has been undertaken to understand the underlying issues in health care from the service user perspective. The study shows that even though the public had little experience of the newly introduced family physicians and there were many problems in the transition period, the shift to a primary care based service was seen as a positive one. There is an expectation that the doctor patient relationship will be closer than in the past.

Figure 8 below shows 4.7 outpatient contacts per person in Turkmenistan for 1997, comparable with other central Asian republics. It is not clear if this represents an accurate reflection of practice, however.

Public health services

In Turkmenistan, like most eastern European countries, the term "public health services" has had a very narrow focus, covering only a few specific determinants of health such as environmental hazards and communicable diseases (*27*). Environmental health services in Turkmenistan are provided through the state Sanitary Epidemiological Inspectorate. It is basically responsible for the enforcement of the national laws for "Sanitary and epidemiological welfare of the population" which means that the Sanitary Epidemiology Inspectorate is in charge of prevention activities at the national, velayat and etrap levels. In order to deliver these aims, the sanitary epidemiology inspectorate infrastructure was established. It is supervised and managed by the Chief State Sanitary Doctor who is a Deputy Minister of Health. The Sanitary Epidemiology Inspectorate, under the Ministry of Health and Medical Industry, includes the following departments: state sanitary control and radiation hygiene; hygiene expertise and certification of products; epidemiological control and parasitology; dangerous and quarantine infections; and support services. The highest executive agency is the national Sanitary Epidemiology Inspectorate. It has a vertical infrastructure, which includes velayat, city and etrap sanitary epidemiology inspectorates.

In the past sanitary and epidemiological services of the Ministry of Health and Medical Industry were responsible for communicable disease control. It oversaw the functions of surveying the environmental situation including vector control and occupational safety. It looked out for problems such as environmental pollution, food contamination and outbreaks of communicable diseases. There was a well-established vertical organization at the national, regional (velayat) and district (etrap) levels with a vertical reporting and information stream within the "sanepid" system (*28*). A vertically organized service was successful in the past in controlling communicable diseases (*29*). The service was renamed State Sanitary Epidemiological Inspectorate in 1998 and took on hygiene certification as an additional function. In order to do this, the centre for standards and certification of food products was transferred from the Ministry of Trade to the Sanitary Epidemiology Inspectorate. The central hygiene and epidemiology laboratory, reporting to the Sanitary Epidemiology Inspectorate, was also established. The Sanitary Epidemiology Inspectorate has its own administrative departments, a function not enjoyed by its predecessor: sanitary epidemiology services.

The major functions of the inspectorate are as follows:

- state environmental control and epidemiological research
- prevention of communicable diseases
- hygiene certification of all related to health products
- collection of information on infectious diseases and the environment relating to health indicators
- monitoring and assessment of the impact of environmental conditions on health
- guiding role in capacity-building process in relation to the environmental health and epidemiological wellbeing of the population
- development and implementation of measures for vector control and food poisoning;
- standard setting for hygienic conditions and relevant regulatory and legal acts
- control of food and water quality
- public health education on hygiene
- pest control and disinfection
- purchasing, storage, transportation and distribution of vaccines and sera.

Besides the Ministry of Health and Medical Industry, sanitary and epidemiological services are also provided by other ministries: the Ministry of Interior Affairs and the Ministry of Defence.

The Sanitary Epidemiology Inspectorate is financed from the central and local budgets and accounts for only 3% of total health expenditure. There is a shortage of chemical and biological reagents and of laboratory supplies. Current legislation on food and water safety is inadequate. The standards of the former USSR are still applied to the production of goods and further development of hygiene regulation is recognized to be necessary.

Site rationalization has been part of the health care reform process, two sanitary epidemiological stations have been closed down (leaving a total of 44), and the laboratories for radiochemical and virological analysis in Ashgabat city and Akhal velayat were merged, as were the sanitary epidemiology units in the airport and railway station. Additional sanitary quarantine posts are being commissioned: eight on highways, nine in railway stations, seven in airports, four in seaports and one in a river port. The posts are staffed with sanitary feldshers and work to prevent the importation of communicable disease or contaminated goods. They have the power to detain people and cargo.

The newly-established inspectorate has the same problems as the former service: insufficient legislation and financing; lack of qualified personnel and training facilities; poor physical conditions; and insufficient intersectoral

cooperation. The environmental health service is provided separately from primary care services.

In order to strengthen the role of the inspectorate, the Ministry of Health and Medical Industry recently issued new orders in the area of sanitary and epidemiological services. These orders included control of infectious diseases such as diphtheria, poliomyelitis and malaria and regulations on sanitary certification of manufacturing. Amendments to the Sanitary Code of Turkmenistan were also written. The Ministry of Health and Medical Industry participated in drawing up laws on radiation safety, transportation of dangerous goods and preservation of air quality.

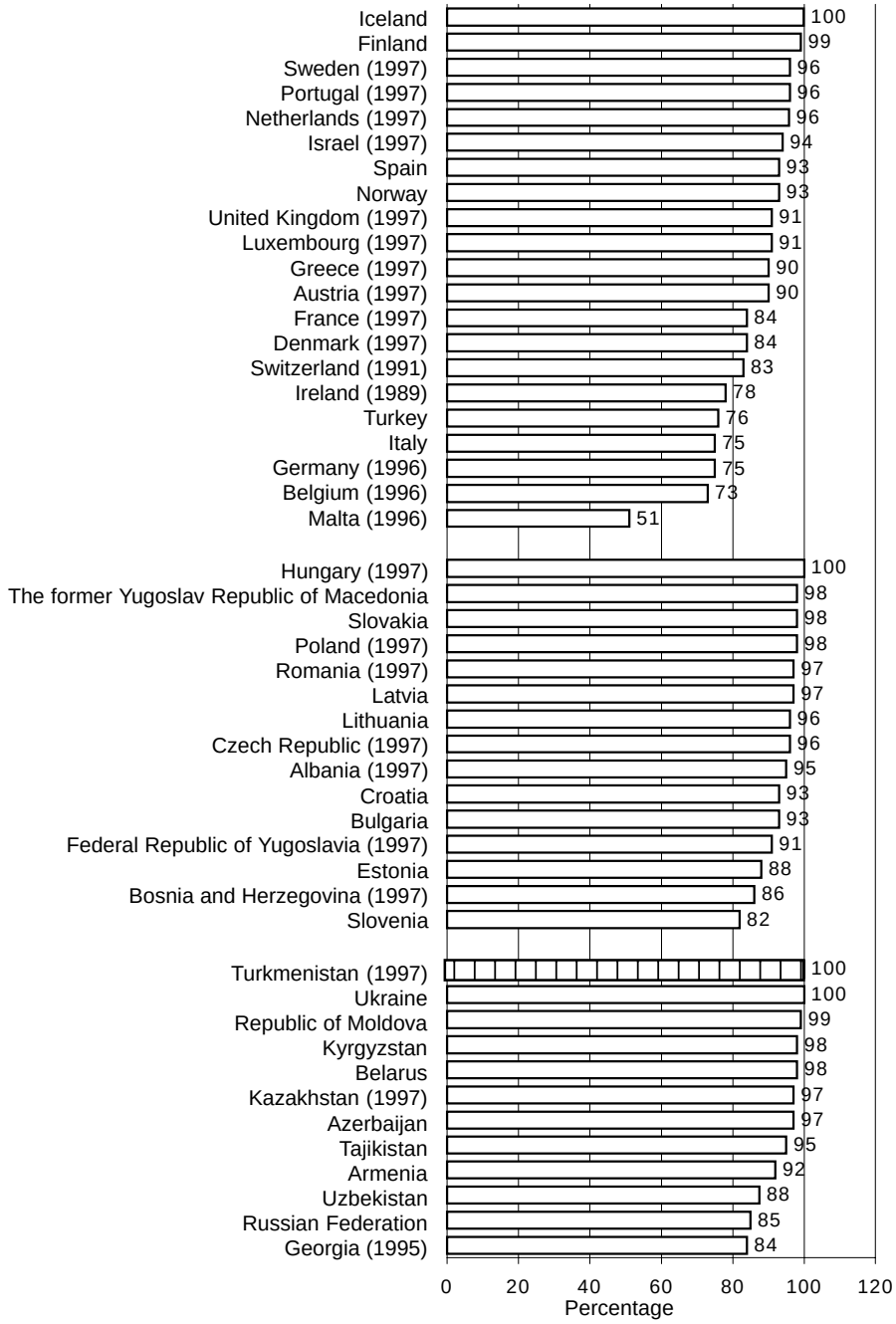
Childhood immunization is compulsory in Turkmenistan and is provided through primary health care facilities and other maternal and child health services. Due to improved vaccine supply as a result of external assistance, measles incidence has substantially decreased in 1995 and 1996, after an increasing trend until 1994.

There has been significant input into the prevention of vaccine preventable diseases from external agencies. This has been raised up the political agenda because of epidemics of diphtheria in 1994, 1995 and 1996, with case fatality rates of 23%. The World Health Organization has offered a consultative and coordinating role, whilst a partnership with UNICEF and the Japanese government has provided vaccines on a decreasing scale of subsidies since 1995. It is planned that subsidy will cease in 2000. The greater availability of vaccine has allowed improved measles vaccination coverage, with consequent decreases in measles incidence since 1994.

With regard to environmental health, Turkmenistan has a variety of problems such as lack of water resources and air and water pollution. There are also problems from the Aral sea region that constitute a major threat to the health of its population. Dashkhovuz velayat is in the Aral Sea region, where high hepatitis and intestinal disease mortality rates have been noted, largely as a result of the use of open and contaminated water resources. The priority areas are: health and safety at work; water quality; food quality and safety; waste management; management of soil pollution; air quality radiation safety; and management of environmental health services.

Turkmenistan created a National Environmental Health Action Plan in 1999; in line with the recommendations of the European Conference on Environment and Health in Helsinki (1994), as well as having undertaken other important activities in this field (*30*). Healthy lifestyle promotion and disease prevention on a national level is the responsibility of the Ministry of Health and Medical Industry. These activities are provided mainly by the "Health Centre" and also by the prevention and treatment and mother and child health departments of

Fig. 9. Levels of immunization for measles in the WHO European Region, 1997 or latest available year



Source: WHO Regional Office for Europe health for all database.

Turkmenistan

the Ministry of Health and Medical Industry. The Health Centre acts as a central health education agency, largely through the support of health education activities at peripheral health care facilities. Health promotion and disease prevention was reassigned to primary care in 1997 (under the overall supervision of the Health Centre). It is unclear to which extent primary care is actually delivering these services.

Table 10. Immunization coverage (%) and incidence of measles and diphtheria per 100 000 population

	1990	1991	1992	1993	1994	1995	1996
Incidence of measles	76.4	35.7	18.0	63.0	64.6	8.8	2.2
Measles immunization coverage[a]	79.6	62.6	76.0	85.1	90.2	91.9	93.3
Incidence of diphtheria	0.11	0.11	0.57	0.08	1.48	1.9	1.9
Diphtheria immunization coverage	–	80.9	–	72.8	92.2	92.6	93.6

Source: Ministry of Health and Medical Industry.
Note: [a] Immunization schedules were altered in 1994.

Smoking prevention is high on the political agenda in Turkmenistan, largely as a result of direct presidential intervention, and public area smoking bans were instituted towards the end of 1999.

Secondary and tertiary care

Hospitals in Turkmenistan are designed to provide general secondary and more specialized inpatient care. All hospitals in the country may be grouped as follows: rural hospitals (primary health care based), etrap (district) hospitals, city hospitals, dispensaries (specialized hospitals), velayat (regional) hospitals and central clinical hospitals. Velayat hospitals are located in the administrative centre of the velayat (region), and better supplied with more specialized personnel and medical equipment than etrap hospitals, which provide only basic care. Central hospitals are located in the capital to deliver tertiary care at national level by accepting referrals from other velayats (regions), cities and etraps (districts). Hospitals do not admit patients unless they are referred from primary care, except emergency cases or patients who are willing to pay.

In the past, Turkmenistan had a large number of hospital beds and many small specialist hospitals. The Ministry of Health and Medical Industry started reducing the bed capacity and merging hospitals in 1996, as shown in Table 11. The health for all database reports 33 000 beds in 1997.

The hospital services of the country are publicly-owned. Personnel employed in hospitals are salaried government employees. In 1998 chief physicians were reclassified as directors of hospitals. This was simply a change of title and has not, as yet, changed the nature of their work.

The Ministry of Health and Medical Industry has spent considerable effort in the rationalization of hospitals, for example in the reduction of hospital beds (Fig. 11) and the merger and closure of hospital units. (Table 12). The health for all database shows 331 inpatient institutions in 1997.

In spite of a significant reduction in bed capacity, bed occupancy rate is still low (well below 80%). Average lengths of stay (ALOS) also leave scope for improvement (Table 14), and remain considerably longer than in most EU countries (Table 13).

Table 16 suggests a degree of overprovision and underutilisation of secondary care facilities, relative to other countries in the region. If the trends apparent in Table 15 continue, however, this problem will reduce in importance.

Table 11. Number of hospital beds

	1995	1996
Central Research Institutes	1 055	980
Central Hospitals	3 735	2 980
Velayat Level	18 047	14 872
Etrap Level	21 193	15 616
Total	**44 060**	**34 448**

Source: Draft of the Realization Plan for the Presidential Health Programme, Ministry of Health and Medical Industry, 1997.

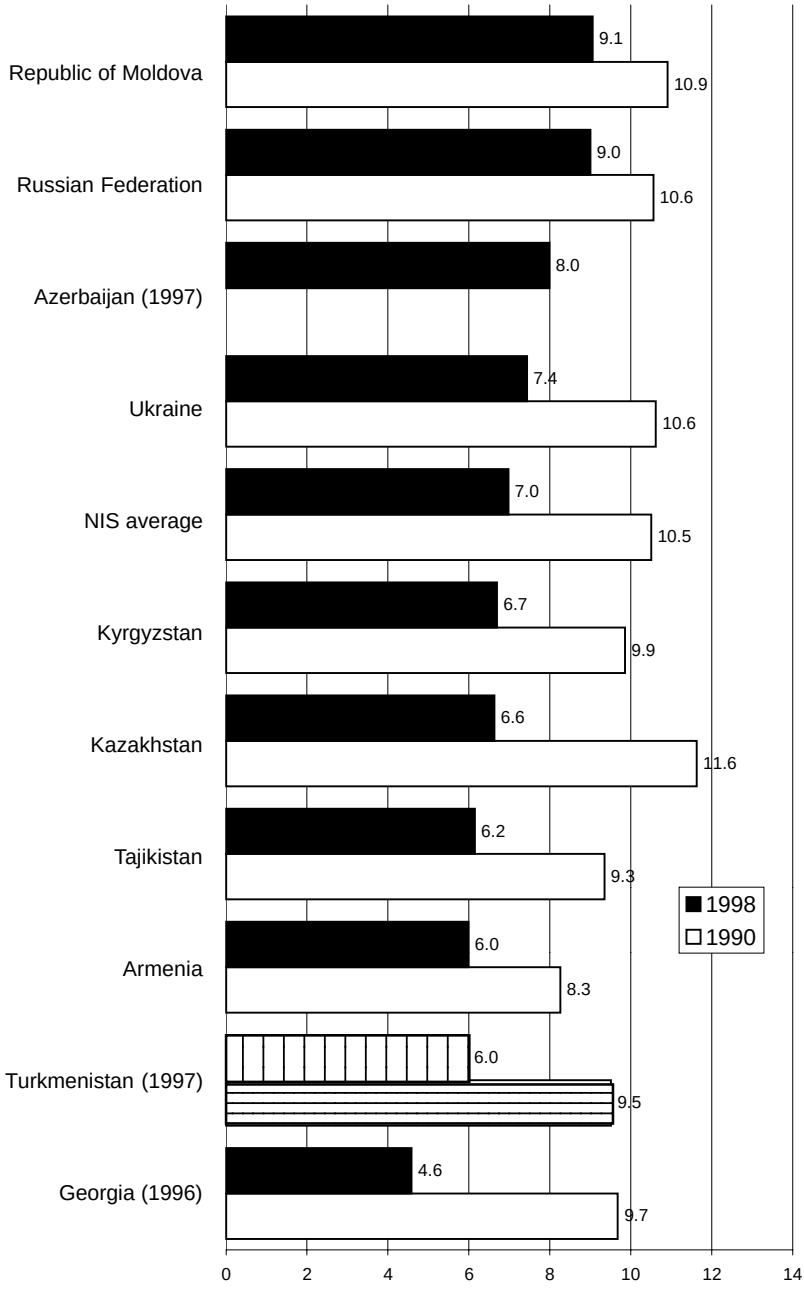
Attempts to give some autonomy to central level hospitals since January 1996 have focused on finance and personnel management. Chief physicians in central hospitals have been granted the flexibility to transfer money between budget lines other than those related to staffing, food and medicine: global budgeting. The implementation of global budgeting was impeded by the scarcity of resources and, in turn, negatively impacted upon expected efficiency gains. The experiment was stopped in June 1997.

Chief physicians at central hospitals highlighted two barriers to flexibility in the use of resources:

- a barter system between state agencies
- most of the funds available are for salaries, food and medicine: areas where the chief physician can exercise little discretion.

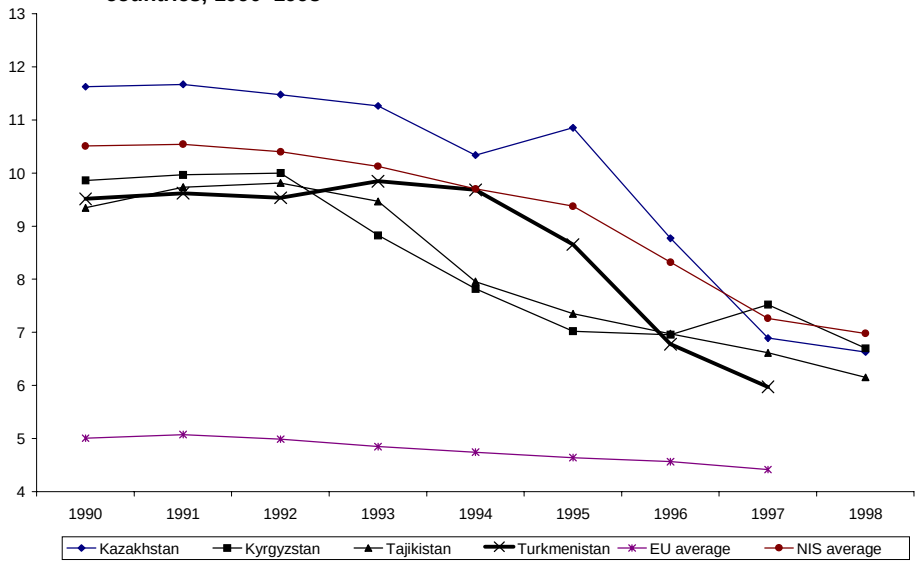
Concerning personnel management, chief physicians of all hospitals have been authorized since 1996 to issue contracts of employment to all hospital staff excluding deputy chief physicians and chief accountants. Due to the relatively

Fig. 10. Hospital beds in acute hospitals per 1000 population in the newly independent states (NIS), 1990 and 1998 (or latest available year)



Source: WHO Regional Office for Europe health for all database.

Fig. 11. Number of hospital beds per 1000 population in Turkmenistan and selected countries, 1990–1998



Source: WHO Regional Office for Europe health for all database.

Table 12. Inpatient institutions in Turkmenistan

	1995	1996
Central research institutes	4	4
Central hospitals	11	10
Velayat hospitals	22	22
Velayat dispensaries	20	20
City hospitals	41	36
Etrap hospital	46	46
Etrap dispensaries	84	81
Rural hospitals	141	108
Rural maternity homes	91	56
Total	**460**	**383**

Source: Ministry of Health and Medical Industry.

short time that has elapsed since implementation of this system, its impact is difficult to assess. Directors are appointed to and removed from their posts by the order of the Ministry of Health and Medical Industry, with the ratification of hakims of etraps (districts) and/or velayats (regions) (*31*).

In 1996, the internal organization and administrative structure of hospitals was changed. There was a reduction of number of deputy chief physicians amongst whom there was believed to have been unnecessary duplication.

Table 13. Inpatient utilization and performance in acute hospitals in the WHO European Region, 1998 or latest available year

Country	Hospital beds per 1000 population	Admissions per 100 population	Average length of stay in days	Occupancy rate (%)
Western Europe				
Austria	6.4[a]	24.7[a]	7.1[a]	74.0[a]
Belgium	5.2[b]	18.0[b]	7.5[b]	80.6[c]
Denmark	3.6[b]	18.8[b]	5.6[b]	81.0[b]
Finland	2.4	20.5	4.7	74.0[c]
France	4.3[a]	20.3[c]	6.0[b]	75.7[a]
Germany	7.1[a]	19.6[a]	11.0[a]	76.6[a]
Greece	3.9[f]	–	–	–
Iceland	3.8[c]	18.1[c]	6.8[c]	–
Ireland	3.4[a]	14.9[b]	6.7[b]	82.3[b]
Israel	2.3	18.4	4.2	94.0
Italy	4.6[a]	16.5[a]	7.0[a]	76.0[a]
Luxembourg	5.6[a]	18.4[d]	9.8[b]	74.3[d]
Malta	3.9[a]	–	4.5	72.2[a]
Netherlands	3.4	9.2	8.3	61.3
Norway	3.3	14.7[b]	6.5[b]	81.1[b]
Portugal	3.1	11.9	7.3	75.5
Spain	3.1[c]	10.7[c]	8.5[b]	76.4[c]
Sweden	2.7[a]	16.0[b]	5.1[b]	77.5[b]
Switzerland	5.2[b]	14.2[e]	11.0[a]	84.0[a]
Turkey	1.8	7.1	5.5	57.3
United Kingdom	2.0[b]	21.4[b]	4.8[b]	–
CCEE				
Albania	2.8[a]	–	–	–
Bosnia and Herzegovina	3.4[g]	7.4[g]	9.7[g]	70.9[g]
Bulgaria	7.6[b]	14.8[b]	10.7[b]	64.1[b]
Croatia	4.0	13.4	9.6	88.2
Czech Republic	6.5	18.4	8.8	70.8
Estonia	6.0	17.9	8.8	74.6
Hungary	5.8	21.7	8.5	75.8
Latvia	–	–	–	–
Lithuania	–	–	–	–
Poland	–	–	–	–
Romania	–	–	–	–
Slovakia	7.1	19.3	10.3	77.9
Slovenia	4.6	15.9	7.9	75.4
The former Yugoslav Republic of Macedonia	3.5[a]	8.1	8.9	66.5
NIS				
Armenia	6.0	6.0	10.7	30.2
Azerbaijan	8.0	5.6	–	–
Belarus	–	–	–	88.7[d]
Georgia	4.6[b]	4.8[b]	8.3[b]	26.8[d]
Kazakhstan	6.6	14.9	13.0	91.2
Kyrgyzstan	6.7	15.8	12.9	81.7
Republic of Moldova	9.1	16.9	15.4	77.6
Russian Federation	9.0	19.9	14.0	82.5
Tajikistan	6.2	9.7	13.0	59.9[b]
Turkmenistan	6.0[a]	12.4[a]	11.1[a]	72.1[a]
Ukraine	7.4	17.9	13.4	88.1
Uzbekistan	–	–	–	–

Source: WHO Regional Office for Europe health for all database.
Note: [a] 1997, [b] 1996, [c] 1995, [d] 1994, [e] 1993, [f] 1992, [g] 1991, [h] 1990.

Table 14. Inpatient facilities utilization and performance, 1989–1997

Inpatient	1989	1990	1991	1992	1993	1994	1995	1996	1997
Hospitals per 100 000 population	9.3	9.5	9.8	9.9	10.1	9.9	6.6	7.7	7.1
Admissions per 100 population (all hospitals)	20.7	20.3	19.8	18.8	19.1	17.0	14.3	12.7	13.0
Average length of stay in days (all hospitals)	15.0	15.1	15.2	14.7	14.9	15.1	15.4	14.8	13.4
Occupancy rate (% acute hospital beds)	87.9	82.7	81.2	76.7	78.8	70.9	65.8	63.3	72.1

Source: WHO Regional Office for Europe health for all database.

Social care

Community care is provided by the Ministry of Health and Medical Industry and local government as a part of the health care system. Since 1998 some institutions were transferred to the Ministry of Health and Medical Industry from the Ministry of Welfare. They include rehabilitation centres for invalids, four homes for the elderly and infirm, two specialist nursing homes for people with neurological disorders (psycho-neurological home-internats) and specialist committees which determine the fitness to work of a patient (medicosocial expertises).

Mental health services in Turkmenistan, similar to most of the NIS countries, is hospital and disease based. At the central level, the Ministry of Health and Medical Industry, there is a small unit responsible for psychiatric and drug addiction services. Psychiatric hospitals and psychiatry and drug addiction dispensaries are spread around the country. Health resorts are also under the Ministry of Health and Medical Industry control. The system is highly centralized and vertically structured.

At velayat level, there are specialized hospitals and dispensaries for mental health services, both for psychiatry and drug addiction. At the rural level, mental health services are expected to be integrated with primary health care services but, in reality, mentally ill patients are usually referred to the nearest specialist service.

Rationalization of the health sector has inevitably affected mental health services. In 1999 the Central Psychiatric Hospital was transferred outside the capital and its bed number significantly reduced. There is, at present, an outpatient psychiatry dispensary in Ashgabat.

Established practice is the treatment of patients with mental illness at hospital as opposed to treatment at community level. It is national policy, however, to

decrease hospital inpatient treatment and shift to outpatient, day-care treatment and home care for the mentally ill. Although there are some in-service training courses regarding psychiatry and drug addiction, they seem to teach diagnosis and referral rather than handling mental illness at primary health care level.

Social care is underdeveloped in Turkmenistan, and thus hospitals are often housing people who might better be placed in social care institutions. More often, however, it is within the traditional extended family that the burden of social care lies. Social services, where available, are provided free of charge to the elderly, either in their home or in residential institutions. In the absence of other support systems, social workers will perform some of the functions of daily living (such as shopping) for those unable so to do. Enhanced social care packages are made available to war veterans.

The Red Crescent Society provides a variety of social care activities beyond the statutory health system. These services include home services for elderly, disabled and chronically ill patients through visiting nurses.

Human resources and training

Health care professionals are Turkmenistan government employees who work in facilities owned by the state. The principal providers of medical care in Turkmenistan were specialist doctors. These doctors were assisted by a number of other mid-level personnel. including nurses, feldshers, midwives, laboratory diagnostic technicians, pharmacy technicians and dental technicians. Workers in all of these categories are directed by physicians in their respective specialties, except feldshers, who can work and treat patients independently (within defined protocols).

Figures from Ministry of Health and Medical Industry estimate the number of physicians as 300 per 100 000 population in 1997. (There are considerable geographic variation in the distribution of medical staff, especially for Ashgabat which is a referral centre for specialized medical and diagnostic services.)

The health care delivery system is still largely secondary care based. Only 20% of physicians working in the Ministry of Health and Medical Industry work in primary health care settings, while 58% work in hospital services (*32*) (1995 figures). Figures for 1997 from the WHO Regional Office for Europe health for all database show 64% of physicians overall working in a hospital setting.

The number of physicians per thousand population increased until 1994, since when a slight decrease has been noted (Fig. 12). The ratio of mid-level personnel to physicians has varied only a small amount (from 3.0 to 3.2) during the last eleven years. Since independence in 1991, there has been a net increase

in the total numbers of doctors, dentists and midwives. Pharmacists and nurses have decreased in number over that period (Table 15). Admission to the Medical Institute was reduced from 525 in 1992 to 260 in 1998 (*33*). The admission capacity of nursing schools has also been reduced throughout Turkmenistan. Akhal Nursing School has been closed.

Staffing levels in Turkmenistan are based on norms that define the number and the categories of health personnel that should work at the various levels and institutions. This has limited the flexibility in moving posts to areas of

Table 15. Health care personnel numbers, 1980–1997 (physical persons)

Staff	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997
Physicians	8 223	10 655	13 215	13 763	13801	14 091	14 299	14 475	13 973	13 851
Dentists	438	795	932	908	946	951	970	1002	996	997
Certified Nurses	19 608	21 255	30 902	32 729	33 920	34 863	35 996	38 089	28 200	27 067
Auxiliary Nurses	–	–	–	6304	5863	–	–	–	–	–
Midwives	2 175	3 004	3 518	3 398	3 679	3 929	3 867	4 137	3 668	3 617
Pharmacists	599	1 520	1 642	1 730	1 909	1 730	1 757	1 740	1 685	1 544
Physicians Graduating	430	664	444	493	699	761	773	578	515	560
Nurses Graduating	1 192	1 656	2 366	1 958	2 344	1 719	1 890	2 503	1 714	1 064

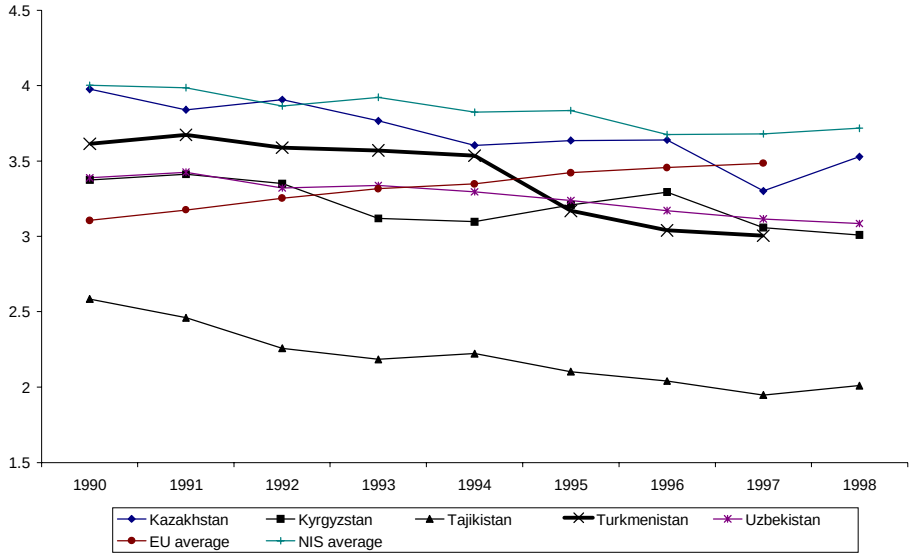
Source: WHO Regional Office for Europe health for all database.

need and distributing staff in accordance with available resources. The number of people actually working may be fewer than the posts available, since the Ministry of Health and Medical Industry permits an individual to take on, in addition to their own appointment, 25% or 50% of a vacant post. Thus, a reduction of staff at medical care facilities can be achieved, without dismissing actual persons, by reducing vacant posts. It should be noted, however, that this type of "overemployment" is a way for supplementing the low incomes of health care workers.

Physicians have the key administrative roles in each institution. There are other staff groups within the administrative hierarchy, such as chief nurse, chief of support services and chief accountant.

The Ministry of Health and Medical Industry supervises the education and training of health personnel, although overall responsibility rests with the Cabinet of Ministers and the Ministry of Education. The Ministry of Health and Medical Industry coordinates the work of the Turkmen State Medical Institute and the five medical nursing schools, which are located one in each of the velayats (except Akhal velayat) and one in the city of Ashgabat. The Turkmen state medical institute has five faculties: Paediatrics, Therapeutics, Sanitary Epidemiology, Dentistry and Pharmacy.

Fig. 12. Number of doctors per 1000 population in Turkmenistan and selected countries, 1990–1998



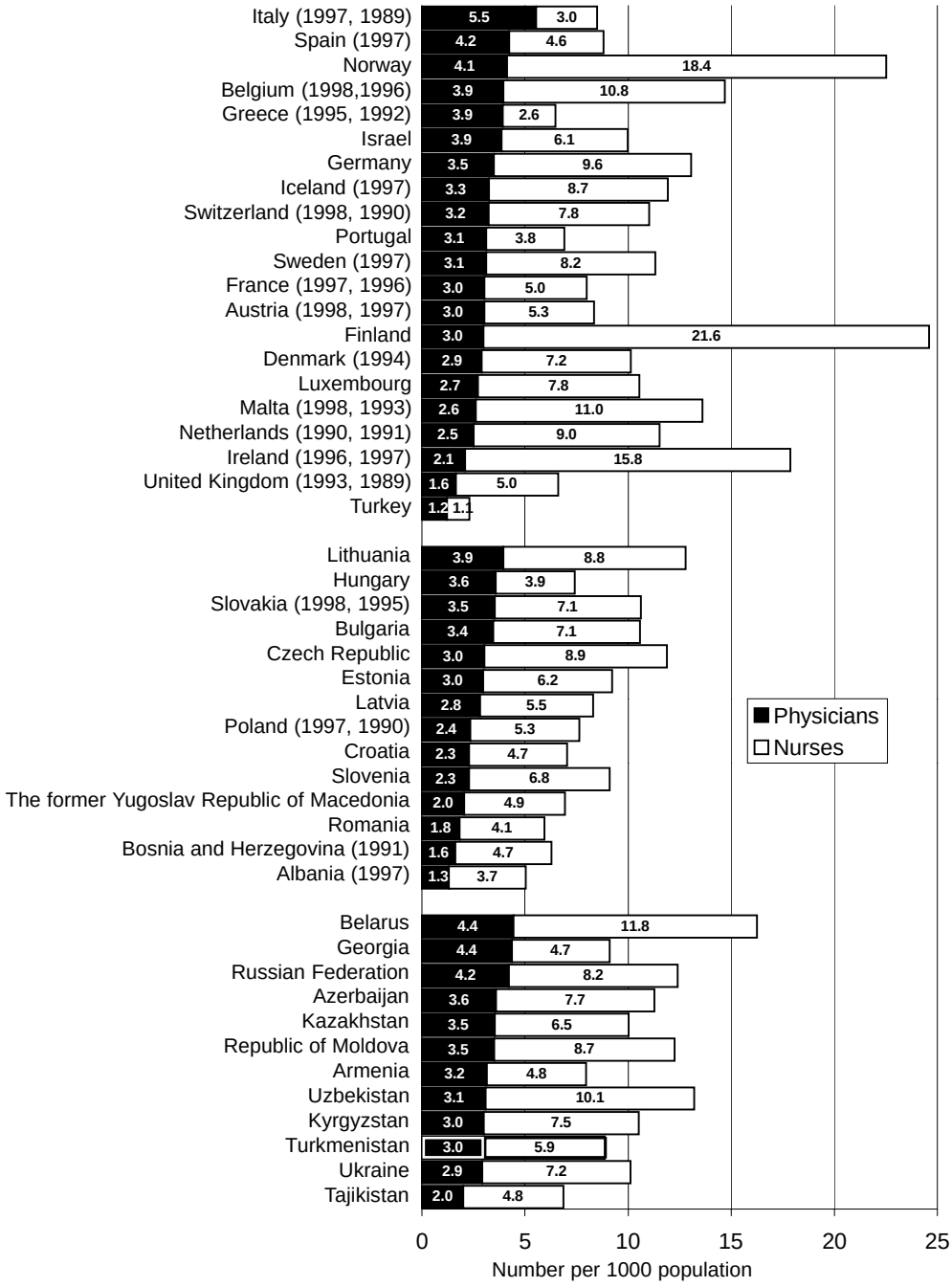
Source: WHO Regional Office for Europe health for all database.

Medical students specialize early in training between different areas of practice. These include child health, adult medicine and sanitary epidemiology. This early specialization may lead to lack of generalist knowledge and skills and may be a problem for the training of family physicians in the future. Pediatricians and therapeutists are trained for six years; other disciplines, such as sanitary epidemiology specialists, dentists and pharmacists, have five-year training.

Training of mid-level health personnel is firmly based on treatment rather than focusing on health and disease prevention. The role of the nurse is still, for the most part, serving the doctor not caring for the patient. The majority of the tutors in the nursing schools are physicians; only some practical training programmes are carried out by nurses. As in many countries, management of human resources for health has been neglected. Training has been emphasized and the effective use of health personnel has been ignored.

A postgraduate training department for family physicians was established within the Medical Institute. The department, responsible for one-year undergraduate and internship training for physicians who wish to become family physicians during the sixth year of training, also provides one month and six weeks short postgraduate courses. These courses appear to be the means whereby existing specialist physicians retrain to work as general practitioners.

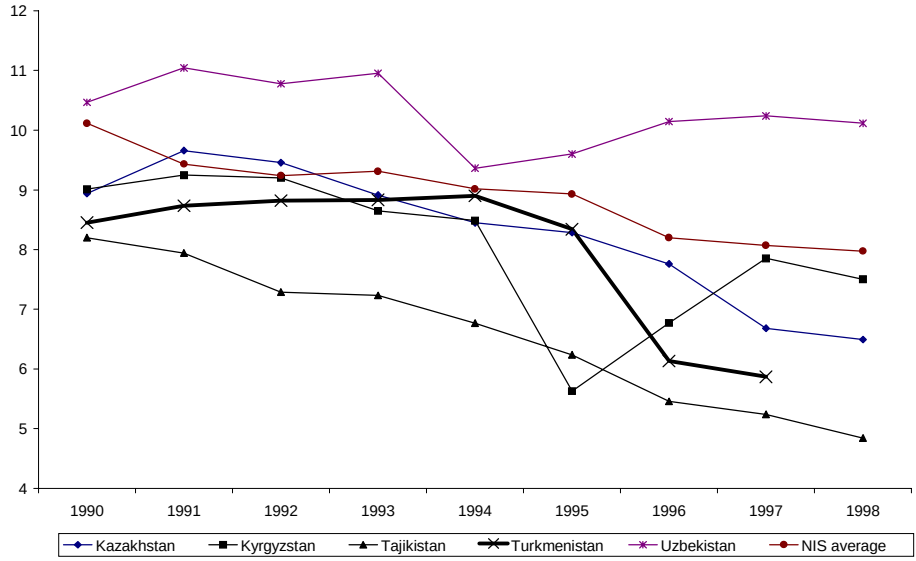
Fig. 13. Number of physicians and nurses per 1000 population in the WHO European Region, 1998 or (latest available year)



Source: WHO Regional Office for Europe health for all database.

Nursing Schools started undergraduate family nurse programmes in 1996. In addition to these courses, a variety of sessions, both theoretical and practical, have been organized by international agencies dealing with subjects such as reproductive health and child health. The longer-term plan is to establish family practice training centres in each velayat.

Fig. 14. Number of nurses per 1000 population in Turkmenistan and selected countries, 1990–1998



Source: WHO Regional Office for Europe health for all database.

The main reform activities in human resources for health have focused on the rationalization of health personnel and the training of new types of health personnel such as family physicians and family nurses.

Countrywide, there was a reduction of more than 7000 posts, primarily from mid-level posts. By 1999 the number of physician positions in hospitals has been reduced by 18.4% from 1996 levels, down from 20 282.

It is proposed, in the Presidential Health Plan, that policies and plans for human resources for healthcare will be directed towards achieving health priorities. The rationalization of human resources will focus on achieving reductions through the supply side, revising the staffing norms and reducing the number of posts. The Medical Institute will be rationalized with consideration being given to merging the pediatric and therapeutics faculties firstly and the sanitary and epidemiology faculties in the long term. The medical school

will also be restructured. Requirements have been defined in terms of the training needs, responsibilities and knowledge of recently established health professions: family physicians, and family nurses as well as proposed new professions: public health physicians and professional health service managers.

Pharmaceuticals and health care technology assessment

The pharmaceutical sector within Turkmenistan remains in state ownership. Imports of drugs are problematic as a result of high prices, further inflated through barter deals for gas exports, and lack of available funds for their purchase, partly as a result of non payment for gas exports.

The Ministry of Health and Medical Industry has been in charge of the pharmaceutical sector in Turkmenistan in terms of production, supply and distribution of pharmaceuticals since May 1997. State-owned enterprises, under the auspices of the Ministry of Health and Medical Industry, are responsible for the production, supply, distribution and contracting of pharmaceuticals and medical equipment for the entire health sector. These corporations come under the direct supervision of one of the four Deputy Ministers of Health.

The Ministry of Health and Medical Industry runs 374 state pharmacies throughout the country. Approximately 60 private pharmacies opened in 1996 and 1997.

The Ministry of Health and Medical Industry responsibilities include the following:

- improving supply of medicines and equipment
- developing medical equipment and pharmaceutical industries
- developing logistics and supply networks for the health sector
- encouraging foreign investment in the health sector.

These activities are, for the most part, self-financing, largely through licensing activities.

The drugs currently used in Turkmenistan are limited and have been selected mostly because of their availability rather than their usefulness to the prescribing physician. The Ministry of Health and Medical Industry issued a new essential drug list in July 1997, which includes 150 items plus 30 types of vaccines. The previous list that includes 364 items is still in use as well. The WHO model list of essential drugs was taken as a basis for selection of drugs in the essential

drug list; however, selection criteria have not been clearly formulated. Both lists involve some drugs without proven efficacy and some not used any more in western Europe – perhaps influenced by the supply of drugs through barter and clearing which may be limiting the choice.

Procurement of drugs in Turkmenistan based on the aggregated estimations of each health care institution. The Ministry of Health and Medical Industry prepares a general annual drug requirement for the whole country based on the requests made by velayat health administrations or central health care institutions and on consultation with the commission with responsibility for estimating drug demand and rational drug use.

Drugs are procured largely through barter and clearing agreements in exchange for gas deliveries (mostly from NIS) or by credit loan. Only a small amount is purchased on the free market. Both barter/clearing trade and credit loan procurement limit the freedom of choice of manufacturer and price negotiation possibilities. It also forces Turkmenistan to buy large quantities at one time. The advantage, of course, is that no hard currency or pre-payments are necessary.

Drugs sold by private pharmacies are registered by the "state centre for registration, quality control and clinical trials of pharmaceutical, medical supplies and medical equipment" (hereafter will be referred as the Centre). The Centre is, for the time being, only dealing with pharmaceuticals in order to ensure the quality and safety of drugs used in Turkmenistan.

Both community and hospital pharmacies compound drugs (about 5% of all prescriptions). Pharmacies have the capacity to increase the compounding of essential drugs mentioned in the WHO model list provided that there adequate supply of raw materials.

There is little drug information available or disseminated in Turkmenistan. At the moment the Centre is the only source of professional drug information. It suffers from an inadequate resource base. Lack of modern drug information sources and of links with international computer databases are further barriers to high quality drug information.

Drug prices are set based on the purchase price, the exchange rate on the day of customs clearance and a fixed margin. The current pricing methodology is an improvement upon previous years, but a few unresolved issues remain:

- The Ministry of Health and Medical Industry is, in practice, free to put different markups on different products as long as the average is in line with regulations.
- Some products seem to be priced highly due to their purchase through barter and clearing.

- Pricing of drugs at the exchange rate of the day of customs clearance does not take into account inflation, as sale might take place more than a year later. This leads to a loss in revenue for pharmacies and wholesalers.
- There remains an informal economy in pharmaceutical sales, with unregulated and unlicensed sale by small scale private vendors.

The current drug reimbursement system based on the state voluntary health insurance covers approximately 77% of the population of Turkmenistan. In principle, premium payments should cover drug expenses excluding 10% patient co-payment. Delays in premium collection, however, lead to financial problems throughout the whole system.

Turkmenistan improved the provision of medicines to the public during 1997–1998 compared to the previous two-year period. With regard to drug purchase, storage, distribution and quality control, there has been a strengthening of regulations on registration and licensing of pharmaceutical operations. The establishment of a state centre for the registration, quality assurance, examination and clinical trials of medicines, medical supplies and equipment has also been undertaken, along with developing a national essential drugs list and some others have been undertaken.

Medical equipment

Much of the medical equipment in Turkmenistan is old, and in a poor state of repair. Whilst national centres have a limited stock of advanced machinery, equipment is sparse at the sub-national levels. Primary health care is particularly under-equipped. Purchasing, for the most part, is centralized, and technology is assessed on an ad hoc basis. No medical equipment or medical supplies are manufactured in Turkmenistan at the present time.

The Ministry of Health and Medical Industry is in charge of medical equipment and supplies in Turkmenistan. New equipment is procured by the ministry based on the requisitions submitted by health care institutions. Unlike other health care institutions, sanitary epidemiology inspectorate requirements are collected separately through the central Sanitary Epidemiology Inspectorate and then forwarded to the ministry. The ministry has recently undertaken the creation of a database for medical equipment, including commercial information such as names of manufacturers and dealers, average prices and spare parts.

Health facilities in Turkmenistan are largely stocked with equipment purchased in the 1970s and 1980s. About 80% of existing equipment is said to be obsolete and thus should be replaced with more appropriate and safer equipment (*19*).

The state health budget is the main source of funds for the procurement of medical equipment, although some equipment is also purchased through barter from gas export debtor countries. In addition, the government allocates funds for special programmes, which are in addition to the Ministry of Health and Medical Industry budget.

Construction plans for new health facilities include up-to-date medical technology. The purchase of equipment is, however, actually dictated by available budget allocations, not service need. As a result, there is scarcity of equipment and medical supplies, especially at primary health care level.

The Centre has only been dealing with pharmaceuticals to date and, consequently, Turkmenistan has had no systematic programme of health technology assessment. Enterprises under the control of the Ministry of Health and Medical Industry are responsible for maintenance and calibration of medical equipment. They are responsible for the installation, running, maintenance and repair of medical equipment and have a network of sub-units located in the velayats and cities.

Enterprises controlled by the Ministry of Health and Medical Industry also supply health facilities with equipment and spare parts, although availability can be a problem. Health facilities tend to delay payments to these enterprises, which end up heavily indebted to the state bank.

The situation with regard to supplies of medical equipment and spare parts has improved in 1996. Modern equipment, including magnetic resonance imaging and four haemodialysis machines, were purchased for the Niyazov Medical Centre with a credit. The central Mother and Child hospital has been supplied with equipment for the care of premature infants, children with severe pulmonary disease and for laparoscopy.

Improvements to health service buildings, medical equipment, and transport and communication systems are important in the quest for better quality health services. These are expensive and may require prioritization. Upgrading of the primary health care infrastructure will be given priority in line with more appropriate service delivery. From the technological point of view, primary health care facilities should functionally integrate with specialized diagnostic and therapeutic services, avoiding duplication and overlap whilst improving logistics and communication (*34*). Cost management capability will be developed for construction and repair work, which will be contracted out using a system of competitive tendering. Rather than rush towards acquisition of new sophisticated technologies, investment in medical technology will be evaluated on actual need in advance, taking into account running costs of the equipment.

Health information system

The Department of Medical Statistics of the Ministry of Health and Medical Industry was reorganized in 1998 and renamed the Department of Analysis, Forecast and Coordination of Reforms. It is responsible for the health information system. The basic activities of the department are to:

- coordinate information flow in accordance with policy
- collect, process and analyze the health data of the whole country
- publish reports about the health status of populations and health care activities
- provide information to high-level managers of the ministry, the National Institute of Statistics and Forecasts, international agencies, and other relevant organizations;
- give feedback to the velayat and Ashgabat city health administrations and to etraps (districts)
- monitor data collection activities
- prepare data reporting forms
- organize conferences and workshops on health information system issues.

The department carries out these activities through the central and velayat methodological bureaux of medical statistics.

The second major player engaged in the preparation of health-related statistics is the National Institute of Statistics and Forecasts (which has a separate organizational structure to the Ministry of Health and Medical Industry). This unit collects data on births and deaths, and produces demographic information such as distribution of population by age, sex and settlement.

Within the Ministry of Health and Medical Industry, the method used for generating health statistics is the routine reporting system (*35*). The major information collection tools are the standard forms which are manually filled in at all health care facilities. These are collated centrally. Administrative data, such as logistics and financial data, are collected separately and flow through a different path ending up in related ministry departments.

There is also a parallel path for information flow within the structure of the Sanitary Epidemiology Inspectorate. This contains data about infectious and parasitic diseases. This information is also submitted to the velayat health administrations at local level and to the Ministry of Health and Medical Industry at top level. Information from other ministries' health facilities is sent to velayat health administrations, from where it follows normal Ministry of Health and Medical Industry procedures.

The current information system is very rigid and designed to send information upwards for centralized planning purposes, rather than to assist decision-making at local level. At local level, management incentives are very limited. Most of the decisions are made at central level and are based on standards and norms. Information systems are generally regarded only as a means of reporting and communication rather than a tool for management. The only feedback is the publication of the annual report, which has a limited distribution list.

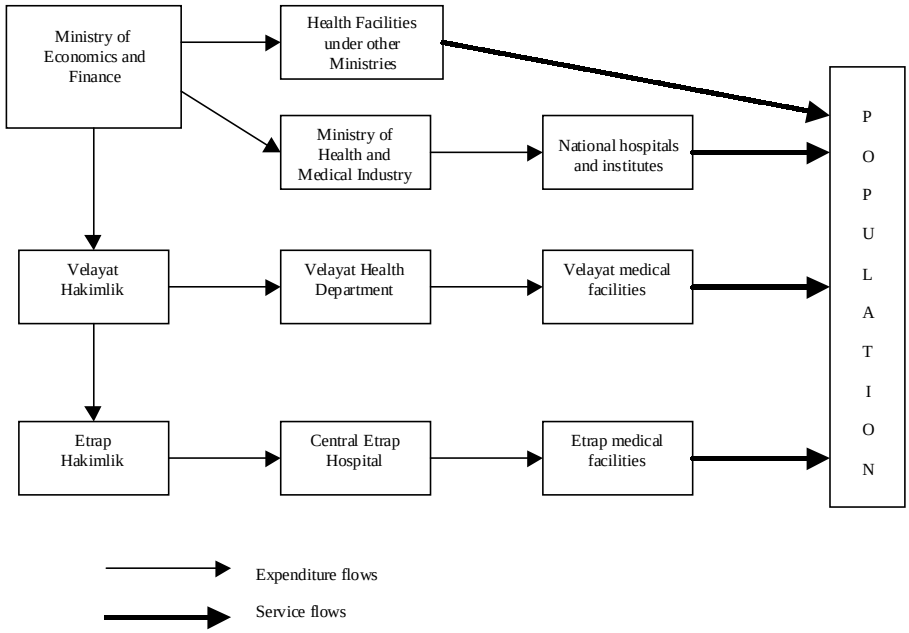
Financial resource allocation

Third-party budget setting and resource allocation

Resource allocation in the countries of the former Soviet Union was traditionally based on predefined normative criteria relating to planned activity, existing bed capacity and numbers of staff. There are two problems that emerge from allocating resources on this basis. First, the resultant pattern of resource distribution does not reflect the health needs of recipient populations. Secondly, perverse incentives develop because allocations are not responsive to efficient management behaviour (*36*); more beds and more doctors mean more funding. Budgets are determined on the basis of information furnished by the individual unit (which in itself may lead to bias). Each facility must calculate their annual resource requirements according to the numbers of beds and doctors in the hospital and the number of planned bed-days (*37*). Budgetary requests are based on 18 line items, however only 10 or 11 of them are used for health care. These items include salaries, medicines, food, equipment, maintenance, and capital repairs. Budgets of primary care facilities are based on planned consultation numbers and staff establishment. These budget requests are forwarded to the relevant health administration (be it etrap, velayat or national) and on to the finance departments. At velayat level, budget requests are combined with those from other sectors, and a multisectoral budget request passed on to the ministry of economy and finance.

The Ministry of Economy and Finance assesses the multisector budgetary requirements for each velayat and allocates according to the availability of resources. The velayat administrations are then free to decide what resources should be allocated to the velayat health administration, depending on the financial needs of other sectors and the discretion of the Velayat hakim. There is no earmarked health budget in the allocation given to the velayat hakimlik by the ministry of economy and finance. Differences among velayat health services in terms of quality and availability of health services are said to be small, in spite of the great discretion this system affords the velayat hakim.

Fig. 15. Financing flow chart



Approximately 80% of the state health sector budget is allocated in this manner. The Ministry of Health and Medical Industry controls around 20% of the health budget with which it directly funds 34 institutions, including central hospitals and university, research and training institutions. Central institutions send their budget request to the ministry, which submits an aggregate of their requests to the Ministry of Economy and Finance. These requests are rarely met in full. Other ministries (e.g. Ministry of Defence) that provide health care for their employees are also allocated resources to fund health sector activities as part of their basic allocation (Fig.15).

Average per capita spending at the velayat level (excluding that spent on central facilities) was 24 929 manat in 1996. Expenditure varies considerably from a high of 39 498 manat per capita in Balkan velayat to a low of 16 530 in Akhal (the closest velayat to Ashgabat). Expenditure on central facilities amounted to around 30 billion (thousand million) manat in 1996 which, when added to velayat spending, increases national per capita spending to 28 337 manat.

It should be noted that the citizens of Ashgabat and Akhal velayat are said to make disproportionate use of central facilities, and this has not been factored into per capita spending, which only includes expenditure on velayat and city health budgets. For this reason, their spending may appear low.

Table 16. Per capita spending by velayat[3]

	Population (thousands)	1996 budget for velayats (thousands of manat)	Total % share	Per capita spending
Turkmenistan	4 566.8	111 760 881	100	24 929
Ashgabat	548.5	9 361 114	8.4	17 187
Akhal	677.7	10 965 514	9.8	16 530
Balkan	389.7	15 383 840	13.7	39 498
Dashovuz	956.5	20 123 073	18.0	21 602
Lebap	947.7	28 203 406	25.2	30 332
Mary	1 046.7	27 723 933	24.8	27 063

Source: Ministry of Health and Medical Industry.

Note: State health care budget only (excludes credits, barter and clearing as well as the budget for central facilities).

Central health care institutions send their budget request to the Ministry of Health and Medical Industry. The ministry makes some amendments, combines all of them and submits the budget to the Ministry of Economy and Finance. Then the Ministry of Economy and Finance proposes the whole state budget to the Cabinet of Ministries, and finally it is approved by the Majlis. Usually final amendments to the budget are made in the Cabinet of Ministries and approved by the Majlis. The health services of Ashgabat are more wide ranging, of higher quality, and take up more resources than those of other velayats. There are powerful reasons for retaining apparent over-provision in the city. Economies of scale reduce the cost of providing tertiary and other national level facilities in one place. In a context where there are insufficient resources to provide good quality services in other parts of the country, the potential damage to capital city's facilities due to reduced allocations may not be justifiable. Resource allocation mechanisms assume that within areas the population is homogeneous. In fact, intraregional disparities can be as significant as interregional differences. In some contexts, the urban-rural distinction may be more important than that between regions (*38*).

Allocation of resources to geographical areas and services is decided upon on the basis of existing health services facilities, bed numbers, occupancy rates and number of health personnel as opposed to population need. This practice has exacerbated an excess of bed numbers and unnecessary hospitalization.

The current financial system is administratively complex and inefficient. Funds are collected from various sources (national taxes, local taxes and income generation), pass through many stages (especially at local level), and can be manipulated by different authorities. Delays occur at every stage of the process, from budget setting to distribution of funds.

Payment of health care providers

Turkmenistan continues to pay for its health care along the same lines as during the soviet system – using norms. At the hospital level, managers calculate their resource requirements each year within a format that permits little flexibility. These are then revised according to the availability of resources at velayat level. Hospitals are allocated budgets according to line items with no capacity for virement although, for the period from 1 January 1996 to July 1997, the Ministry of Health and Medical Industry gave the 22 institutions under its control the authority to do so. In practice, flexibility is still limited because of the system of bartering and the general resource situation.

A detailed list of tariffs for different grades of staff and estimates for each item (such as the expenditure required for the defined nutritional intake per person in hospital per day, differentiated according to the category of patient) is produced and updated by the Ministry of Finance and the Ministry of Health and Medical Industry. Detailed instructions are laid down by the Ministry of Health and Medical Industry for such issues as the numbers of visits by doctors to adults and children in their area each year. It also regulates the ratios that define the relationship between staff positions and bed numbers (in the case of hospitals) or population (in the case of primary care facilities). Bed numbers are also related to population numbers, although other factors are taken into account by the Minister (such as the nature of the area, type of facility) when approving changes to bed numbers.

Capital items may be funded from foreign credit. This requires government assent at the highest level, as it is the government rather than the individual facility that takes on the debt and repayment. The impact of these capital investments on recurrent expenditure must be taken into account by decision-makers. At the end of each year, expenditure estimates based on norms and requests for discretionary funding are submitted from etrap to velayat level and from velayats to the Ministry of Health and Medical Industry. The ministry then compiles a budget which is submitted to the Ministry of Economy and Finance (and ultimately the Cabinet of Ministers and Majlis) for approval.

These estimates then form the budget for the next year. Payment for the central level hospitals is made through the Ministry of Health and Medical Industry, with the remainder sent direct from the Ministry of Finance to the velayat hakim, which in turn remit to velayat health facilities. The same occurs at the etrap level: the finance office in the local administration receives money from its equivalent at velayat level and pays direct to etrap health facilities. The velayat and etrap health authorities appear to be informed about financial issues, but not entrusted with actual disbursement (*39*).

Criteria used in budget setting like number of personnel, beds and patients. do not present hospitals with incentives for improved efficiency and effectiveness. The current financing system created incentives to increase bed numbers and patient throughput. Another problem of the system is that cash is unavailable and the existing barter system is time-consuming and decreases flexibility of managers of health facilities. In future it is planned to use more performance indicators for financing of hospitals.

Following the general reorganization of the scientific research system of the country in 1998 there were changes in status of medical scientific research institutions in Turkmenistan. Previously most of the medical scientific research institutes used national clinics but had a separate administrative chain. Budget financing of these institutes was carried out through two different financial flows: one for scientific research and another for clinical work. After the reorganization they were administratively transferred under the supervision of hospital administrations and financial flows were merged into one, aimed at financing the hospital as a whole. Implementation of the above measures is supposed to focus all the scientific research resources available on the practical needs of the service.

Resources are allocated to the primary care facilities according to the numbers of doctors per 1000 population (on a different basis for adults and children).

Payment of health care professionals

Physicians, both in hospitals and primary care centres, are paid on a salaried basis. They are government employees. Salaries in health sector are determined nationally and quite low. In order to encourage doctors to become family physicians, salaries of family physicians are kept about 50% higher than other doctors' salaries. Incentive-based and performance-related payment mechanisms have also been introduced for family physicians.

Under the new system of payments at the primary health care level (*40*), family physicians currently receive a basic salary plus additional payments based on list size. The size of the basic salary increases for every 100 people registered with a further 30% of salary available on the basis of capitation. Further earnings enhancements are achievable through target payments. A problem with the performance criteria for target payments is that they often relate to indicators that may not be directly influenced by the physician. This provides a disincentive for physicians to work in areas with greater need and, therefore, poorer health indicators.

Health care reforms

Aims and objectives

Turkmenistan has experienced dramatic changes in all aspects of life over the last decade. This has had a negative impact on the health of the population of the country with sharp variations in life expectancy which has begun to lag behind western Europe since the 1980s. Health indicators in the country are worse than in many developed countries and life expectancy considerably shorter. The health care system is functioning inefficiently, on the base of rules and standards established during soviet period, which lead to excess hospital beds, high hospitalization rate and low bed occupancy rate. Curative services have always been given higher priority than preventive services. Although the number of physician and middle level medical personnel in comparison to population is quite high, their professional qualifications are not always aligned to modern requirements.

In order to overcome these problems, the health care reform process was initiated with the aims of health gain, equity, efficiency and solidarity as its main principles, in line with the health for all principles.

The main activities in the restructuring of the health care system started in 1994 with the assistance of the international community. The first step was the preparation of a detailed sector analysis by the World Bank in collaboration with the WHO Regional Office for Europe. The government then developed a health care reform programme which was adopted by the President of Turkmenistan in July 1995 with the declaration of the presidential state health programme (*17*). The presidential state health programme outlines the principles of the health care reform and defines policy directions. Health gain, increasing life expectancy and healthy life expectancy of the population are main aims of the presidential health programme.

The main tasks of the presidential health programme are as follows:

- improving health management
- mixing funding streams for health services
- introducing state voluntary medical insurance
- carrying out effective preventative measures
- ensuring the wellbeing of the population with regard to environmental health and communicable disease hazards
- development of a family medicine based primary care service
- reforming health financing
- rationalization of hospital beds
- strengthening the material and technical basis of medical institutions
- introducing the licensing of the medical and pharmaceutical activities of persons and organizations
- developing the private sector
- increasing the production of drugs and medical supplies
- increasing the quality of training and retraining of personnel
- realigning medical research to the practical needs of medical services.

Content of reforms

Turkmenistan has chosen to follow a systematic approach through the adoption of the state health programme of the President, defining a policy framework and the development of a detailed plan for its realization. Ad hoc decisions continue to be taken, however, sometimes conflicting with the content of the state health programme (*41*).

The 1997 implementation framework for the presidential state health programme proposes that health services be funded mainly from government revenues. The share of GDP for health care is to be increased. Additional revenue for health services will be sought, especially from user charges for some services and income from licensing of imported drugs. A new method of allocating resources to territories is planned in order to reflect the different health need of regions. According to the new method velayats with larger populations, more women and children and higher standardized mortality ratios are to receive a larger share from the health budget than velayats with lower mortality rates and fewer women and children. In order to ensure that the preventive services are adequately financed, government expenditure on health care are planned

primarily to be allocated to preventive services and primary health care. It is envisaged that health care providers will be given more autonomy in the distribution and use of money.

In the framework of the health care reform, it is expected primary health care will take on a wider perspective than its traditional role in caring for the diseased. Primary health care services are planned to take on community and individual based preventive and health promotion services, primary curative health services and part of environmental health services. It is planned that primary health care facilities will be provided with appropriate personnel of high quality, with adequate medical equipment and supplies and transportation and communication systems. A new type of health professional, the family physician is being introduced into primary health care system. This should help provide better quality primary health care services.

Since the emphasis will be on the improvement of primary care and preventive services rather than on secondary and tertiary care there is planned a shift of resources from hospital services to primary health care.

It is expected that rationalization of the hospital infrastructure will continue as services are increasingly provided by primary health care facilities. The autonomy of hospitals is set to be increased in areas such as personnel management, use of financial resources, and the scope and range of services provided, as a step towards the creation of fully autonomous hospitals. The management capacities of hospitals are to be strengthened in order better to cope with the responsibilities that come with increased autonomy. Hospitals should have in place efficient financial management and hospital information systems so that they can obtain timely cost and activity information for decision-making. Hospitals are to be permitted to outsource some of their support services. Clinical practice in hospitals is hoped to be improved by the introduction of clinical guidelines, a clinical audit system, education and training, and by involving patients in quality evaluations.

Payment systems are being developed for primary health care and hospital provision. At the primary health care level modifications to the new system of paying family physicians should introduce patient choice and facilitate quality improvements. At the hospital level, the introduction of global budgets should allow more management flexibility and introduce an incentive framework for efficiency gains.

Pharmaceutical sector management should be improved by redefining the role and responsibilities of organizations dealing with pharmaceuticals. Rational use of drugs is to be promoted through the introduction of a revised national essential drugs list and by changing the therapeutic practices of physicians and providing training for health professionals. Drug procurement is planned to be

based on the essential drugs list. The drug registration and quality control system will be strengthened. A transparent pricing system for pharmaceuticals is envisaged by setting the margins allowed for each product based on the purchase price. The development of a pharmaceutical industry is planned, upon successful completion of a comprehensive feasibility study.

It is planned that health information systems will be improved to support decision-making at all management levels of the health care system. A list of National Health Indicators has been prepared and legacy data collection forms are being phased out. Information Centres have been established in each velayat and in the Ministry of Health and Medical Industry. Health information systems will have three components:

- health statistics
- health management information system
- executive information system.

The priority will be the development of a health statistics component. A database is planned in line with the new list of health indicators. Adaptation of ICD-10 is continuing and intensive training of health personnel on ICD-10 will be conducted.

Reform implementation

In order to facilitate the implementation of the presidential state health plan and to address issues of capacity, the Lukman Health Project was initiated in December 1995 by the Ministry of Health and Medical Industry with the assistance of the United Nations Development Project, the WHO Regional Office for Europe and the Turkish International Co-operation Agency (TICA) to develop the plan for the realization of the presidential health programme and support capacity building (*42*). The project, which also had significant input from the World Bank and UNICEF reached fruition with the publication of the plans for the implementation of the presidential health plan in 1999.

In 1996 a memorandum of understanding was signed between the Ministry of Health and Medical Industry of Turkmenistan, the World Bank and the WHO Regional Office for Europe. Thus, the pilot projects for implementation some parts of the plan for the realization of the presidential state health programme have been financed by World Bank loans. It is hoped that this intersectoral approach will make for greater effectiveness and efficiency.

There has been some progress to date. The introduction of the family physician system is an important step forward, as are the changes in the

organizational structure of the health care system. Additional sources of funds have been identified and the hospital network has been rationalized with significant bed reduction. Health institutions have started issuing contracts of employment for their personnel. Other important areas of progress have been in the reform of medical school curricula to take a more primary care focused approach, and the transfer of the health care social care interface to the ambit of the Ministry of Health and Medical Industry.

In March 1998, a decree renaming primary health care facilities with proposals to revise their functions and to reorganize of sanitary epidemiology services into the sanitary epidemiology inspectorates with the addition of new responsibilities was enacted.

Primary health care development is the cornerstone of the current health care reforms in Turkmenistan. In order to pilot the implementation of the reforms a project, in partnership with the WHO Regional Office for Europe, for the strengthening of primary health care in rural areas of Turkmenistan has been under way since 1998. It is planned to develop model facilities for each level of rural primary health care.

The plan for the realization of the presidential state health programme was finalized in 1999 (*33*). It is planned that the reform will have a broad comprehensive approach including environment, lifestyle and health care. It is noted that lifestyle and environment impact greatly on the health status of the population and that there is need for further programmes to deal with these issues. The reform plan for the health care system is more detailed. Priority areas have been identified. They are child and female health, sexually transmitted diseases/HIV, tuberculosis, cardiovascular disease and viral hepatitis. The focus is upon proven cost-effective interventions, important in the present financial climate. There are reorganization of the health system with regard to organization and management, health care financing, primary health care, public health, hospital services, human resources, pharmaceuticals, health care technology assessment and health information systems.

At the present time, there appears the political will to proceed with reform in the health sector. The strengthening of institutional management capacity in the health sector and the maximization of participation have been the primary foci for the plan for the realization of the presidential state health programme. The available technical capacity is not sufficient to realize and sustain such comprehensive changes without further investment and an ongoing commitment by government.

The Ministry of Health and Medical Industry is responsible for the implementation of reforms. The most crucial responsibility will be change management. In managing the change, there are several aspects that the ministry

needs to tackle. First of all, the ministry needs to develop further the technical aspects of the plan to bring it into a service context and to translate it into action. The public and health professionals will need to be systematically informed about the aims of changes so that they can be kept on board. It is also important to ensure good communication at every level of the health services so that managers can take on their new responsibilities. This requires training so that they may be prepared culturally and psychologically to assume new responsibilities.

Conclusions

Turkmenistan has been in transition from a centrally planned to a market economy since independence in 1991. These years have seen problems that have had a negative impact on the health status of the population. Economic difficulties, partly as a result of shrinking export markets and non-payment by debtor nations, have taken their toll upon the population. There is great health need, particularly amongst children, women and in the more rural parts of the country. Turkmenistan seems to exhibit the health problems both of developed and developing countries.

In order better to align the health care system to the needs of the population, a series of changes to the health care system have been set in motion. Turkmenistan has opted for a cautious approach to health care reform, in line with its policy on broader economic and social change. Health sector reform policy has been formulated in the context of the epidemiological situation and the available resources, in collaboration with both national and international agencies. As a result, the presidential state health programme was announced in 1995 and was further elaborated in the plan for the realization of the presidential state health programme in 1999.

The stated aims of the reform process are the decentralisation of the health care system, enhancement of service efficiency, and a shift in balance from specialist and hospital oriented services to primary health care and preventative services. Greater public involvement and local managerial flexibility are also envisaged.

Turkmenistan still faces many challenges in adapting its health system better to serve the needs of its people. Reform plans have been difficult to implement The culture remains one of administration rather than management. Whilst there are educational programmes to enhance management skills, it is unclear if there is the will to make the transition away from centrally-governed systems. Information and information systems remain geared to governance from the centre, and provide little information to managers in the field, further inhibiting local decision-making.

Turkmenistan has introduced additional sources of funds for the health care system through voluntary medical insurance and user fees. The system of finance allocation, however, wherein the Ministry of Economy and Finance allocates funds directly to the regional (velayat) governments militates against effective supervision by the Ministry of Health and Medical Industry. Were general health funding allocated and distributed by the ministry, this might encourage more effective and efficient use of resources. It would also potentially strengthen accountability and constrain diversion of funds at velayat level between health and other budgets.

The continued reliance upon normative indicators to determine service configurations and resource allocation does not reflect the health needs of the population. More attention needs to be paid to the quality of care provided. There is a need to address perverse incentives to service rationalization, ensure quality enhancement and end the legacy of overprovision and over-reliance on specialist services. Planning and resource allocation processes need to be better aligned with population health needs.

In the wake of reorganization and rationalization, health services remain fragmented, with parallel systems and duplication of facilities. Primary care is central to the development of health services in Turkmenistan. The expansion of family medicine and the reconfiguration of primary care services are important strategies. It is unclear, however, the degree to which these changes are substantive and not merely alterations in nomenclature. The use of financial incentives to encourage clinicians into family medicine may also serve to strengthen the status of primary care within the service. Current target payment structures may act as a perverse incentive to clinicians working in districts with the greatest need, thus compounding health inequalities.

Secondary care inherits a number of challenges from prior systems. Budget allocation systems still militate against reductions in inappropriate hospitalization. The reduction in the numbers of small specialist hospitals has removed some of the excess capacity. Hospitals now can issue contracts of employment, which gives them more flexibility in the size and skill mix of their workforce. Other key issues in hospital services include out-dated clinical methods, and dilapidated infrastructure.

Over the past two years, the economy has shown some encouraging signs. In the longer term, the extensive hydrocarbon reserves in Turkmenistan could yield a more prosperous economic future. The challenge for a population health policy is to ensure that any increase in wealth for Turkmenistan translates into an increase in health for all its citizens.

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Appendix 1

Legislative framework

The current health system is regulated by the constitution of Turkmenistan, laws, Presidential decrees and decrees of the Ministry of Health and Medical Industry. Current law is mostly inherited from soviet times and goes into every detail of the health sector. Because of the reliance upon norms and standards, it can be rather restrictive. Following the ratification of the Constitution, the following laws and presidential decrees relating to health services were adopted by the Parliament in order to ensure the rights of citizens guaranteed by the constitution and to introduce required change:

- The Sanitary Law, adopted in 1992;
- Law on Psychiatric Care, adopted in 1993;
- Presidential Decree No. 2297, issued on 22 July 1995 for the preparation and adoption of the Presidential Health Programme of Turkmenistan and for restructuring the Ministry of Health and Medical Industry;
- Presidential Decree No. 1617, issued on 14 August 1995 on the introduction of state voluntary medical insurance;
- Presidential Decree No. 2398, issued on 21 November 1995 exempting selected population groups from medical charges;
- Presidential Decree No. 2626, issued on 28 May 1996 for iodination of salt and fortification of flour with iron;
- Presidential Decree No. 2400, issued on 21 November 1995, on state licencing of medical and pharmaceutical activity;
- Presidential Decree No. 3640, issued on 13 March 1998 “Establishing the State Fund for health development”;
- Presidential Decree No. 3631, issued on 5 March 1998 “Establishing the Committee on sanitary clean water supply under the Cabinet of Ministers of Turkmenistan”;

- Presidential Decree No. 3630, issued on 5 March 1998 "State licensing, expertise and technical control on planning, construction and use of facilities for water-supply and sewage";
- Presidential Decree No. 3629, issued on 5 March 1998 "Approval of the Programme for water-supply of the population for 1998–1999";
- Presidential Decree No. 3869, issued on 7 September 1998 "Introduction of changes in hygiene certification in Turkmenistan";
- Presidential Decree No. 3672, issued on 6 April 1998 "Improving of the organization of Sanatorium treatment of the population of Turkmenistan";
- Presidential Decree No. 3376, issued on 30 September 1997 "Introduction of subsidy for infant nutrition";
- Presidential Decree No. 3293, issued on 11 August 1997 "Using sodium hypochlorite for water clearing an disinfection";
- Presidential Decree No. 3124, issued on 23 January 1997 "Establishing State Committee for coordination of intersectoral activities in Turkmenistan";
- Presidential Decree No. 2884, issued on 2 December 1996 "State coordination of the straggle with drugs";
- Presidential Decree No. 2488, issued on 5 February 1996 "Social defence of people suffering from radiation events";
- Presidential Decree No. 3725, issued on 28 May 1998 "Establishing international medical centre in Ashgabat";
- Law of Turkmenistan "Labour protection" on 1 October 1993 (changes were introduced on 18 June 1996);
- Law of Turkmenistan "Social protection of handicaps in Turkmenistan" on 19 May 1992 (changes were introduced on 27 June 1998);
- The Law on the prevention of AIDS, adopted prior to independence in 1990, is still in effect.

These laws were followed by a number of ministerial decrees detailing the provisions of these laws in order to ensure their implementation.

The following draft laws have been prepared and are now under consideration:

- Draft Health Law
- Draft Law on Narcotic and Psychiatric Drugs
- Draft Drug Law
- Draft Law on Physical Recreation and Sports
- Draft Health Insurance Law

Recent Presidential decrees have established public smoking bans and a national health day and the Presidential socio-economic programme ratified by the Council of Elders sets out a detailed programme up until the year 2010 including health care reform plans. Laws pertaining to public health, health promotion, prevention of diseases, medical insurance and pharmaceuticals are also planned.