



World Health Organization
Regional Office for Europe



Assessment of NCD prevention and control in Primary Health Care

Georgia 2009

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Report has been prepared for the BCA Product: Strengthening Capacity for Integrated Noncommunicable Diseases Prevention and Control according the Agreement for Performance of Work (APW) between WHO/EURO and Georgian Experts, with a starting date October 2008.

Acknowledgments

The authors would like to thank Alexander Kvitashvili, Minister of Labour, Health and Social Affairs and Dr. Rusudan Klimiashvili, Head of the WHO Country Office in Georgia for their encouragement and guidance. Thanks also to experts and stakeholders from all institutions contributed to the project performance.

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Introduction

Georgia is a transcontinental country in the Caucasus region, located at the dividing line between Europe and Asia. It is bordered by the Russian Federation to the north, Azerbaijan to the east, Armenia to the south, and Turkey to the southwest. Georgia covers a territory of 69,700 km²; its population, excluding Abkhazia and South Ossetia, is 4.4 million, of whom nearly 84% are ethnic Georgians. Georgia is a unitary semi-presidential republic. GDP (PPP) total is \$21.516 billion, per capita - \$4,966. GDP (nominal) total is \$10.227 billion, per capita - \$2,539. Average life expectancy (Total) is 72 years (Male – 69 years, Female – 75 years).

In August 2008, Georgia engaged in an armed conflict with Russia and separatist groups from South Ossetia and Abkhazia. On August 28, 2008, the Parliament of Georgia passed a resolution declaring Abkhazia and South Ossetia "Russian-occupied territories".



In Georgia, as in many other countries with transition economy, the decisive factors for non-communicable diseases (often called chronic diseases) are high morbidity, high death rate and increasing cost of medical treatment.

Generally, the management of non-communicable diseases is associated with number of difficulties, such as the necessity to change lifestyle of population, need for permanent monitoring of treatment process by a doctor, low level of information provision to population about risks related to certain behavior, problems with financial provision for prevention and prolonged medical treatment and etc.

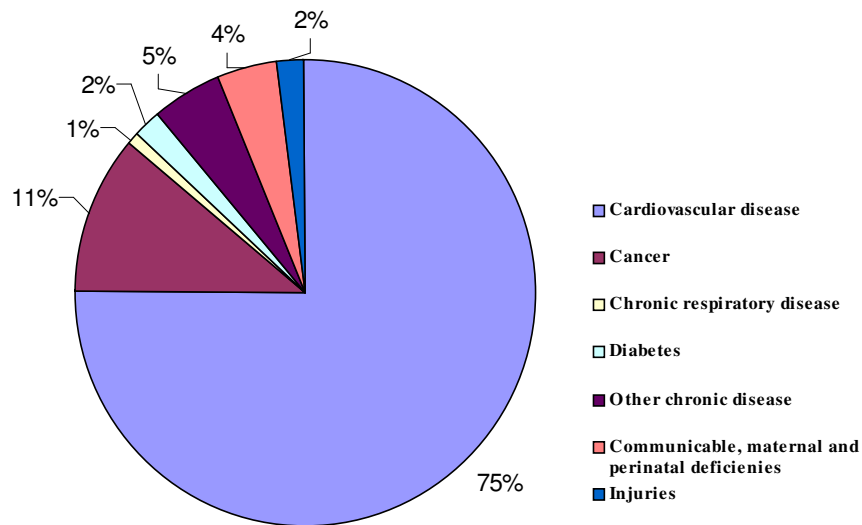


Figure 1 Deaths by cause, all ages, Georgia, 2002

96% of deaths in Georgia come on non-communicable diseases and traumas, from which 75% comes on chronic diseases, 11% on cancer, 2% on diabetes, 2% on injuries, and 1% on chronic respiratory diseases.

We believe, despite of the outdated source, it would be interesting to underline the share of risk factors in the development of these diseases, for underlining the importance of economic, social, behavior related and environmental determinants (*See Attachment 1, Table 1*).

In our opinion, the share of inefficient medical treatment in development of diseases is quite high. This means the inadequate behavior of a patient because of low information provision, self-treatment by patients, and low communication rate with doctors.

According to the World Health Organization 388 million will die due to the chronic diseases during next ten years. By the year 2020 the share of non-communicable diseases will increase further and it will be 60% in the world and 80% in Europe.¹

This means that experts forecast significant complications in the management of these diseases, which needs mobilization of serious efforts, as the real possibilities of decreasing the rate of these diseases has been proven.²

¹ www.who.int

² www.worldbank.org

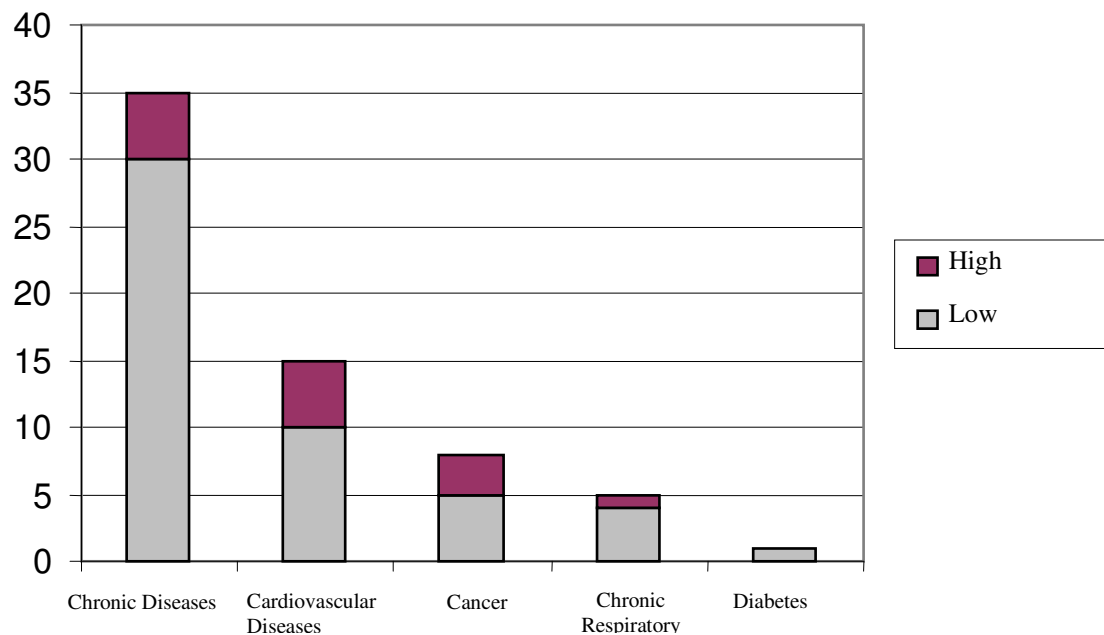


Figure 2 Avoiding of deaths caused by chronic diseases in countries with different levels of income

The rapid increase in the spread of non-communicable diseases increases the medical treatment deficit and is of threat for the social-economic development of many countries (*See attachment 1, table 2*).³

In Georgia, the analysis of the spread of chronic diseases is mainly based on the data provided by the National Center for Disease Control and Public Health, which speaks about the intensity, prevalence and deaths caused by registered diseases in medical-preventive hospitals. Naturally, these figures do not show the real picture in view of the spread of chronic diseases as majority of the patients go to private medical centers, or chooses the self-treatment, instead of going to a hospital.

The complete information about the spread of chronic diseases is received by conducting epidemiological researches. In our country the example of such research (at the national level) was the research of women's reproductive health (1999 and 2005). The given research includes complete information about many indicators of women's reproductive health.

Generally determining of priority directions in view of healthcare is based on the selection of chronic diseases by their importance for public health:

- 1 Diseases which are main causes of death:
 - Cardiovascular diseases
 - Cancer
- 2 Diseases, which are associated with the main causes of illness and disability:
- 3 Respiratory system diseases;
- 4 Diabetes;
- 5 Diseases caused by micronutrient deficiency;
- 6 Digestion system diseases;
- 7 Psychiatric problems.

- Diseases which do not have a serious share in the spread and death structure, but their figures are higher than in other countries, which make them a problem for the public health. The list of such diseases may be changing from year to year.

Assessment and analysis of the real situation with prevention and control of non-communicable diseases in the country creates the possibility for planning and conducting of optimal measures.

³ World Health Statistics 2005 WHO

Activities of the country must be based on the following call by healthcare experts: “The global epidemic of chronic diseases can and must be stopped”.

Methodology

Inventory of any activity and epidemiology situation with non-communicable diseases in Georgian population is of great importance (because of the inefficiency of information provision system, deficit in standard researches in the sphere of given diseases, post-conflict situation of the country and frequent changes in the directions of the development of reforms in healthcare system and etc.)

In the first place the methodology provided for the determining of the informant organizations (*See attachment 3*), which included state organizations, educational institutions, professional associations, NGO's. The long process of data collection (up to 2 months) included spread of informative letters, second stage was telephone messages, remaining about exact deadlines and finally receiving information by e-mail, or letters.

The highest rate of participation in the research was among state organizations (80%), while it was critically low between foreign NGO's (approximately 40%); while we believe the latter is the most important indicator in this research.

For precisising and completing the information, after the analysis of the received data a more deep interview process was conducted among the informants of the Ministry of Health.

2 types of structured questionnaires were worked out for the two coinciding groups of informants (*See attachment 4*).

Almost all, official documents were used.

The given research coincided with the changes attempted in the healthcare system by the government, namely the attempt of changing the financing of the primary healthcare system, which caused serious discussions in the beginning of 2009.

For receiving a more detail information a focus group was organized from heads of family medical centers and family healthcare, family doctors' association representatives.

Along with the main informant organizations the data was also received from several official public information sources operating in the country.

Despite the full support from the state structures, the process of data collection was long and complicated. With the above described specific barriers the process coincided with the period of reconsidering of state funding of the healthcare system.

Section A: Determining the scale of NCD

Morbidity and mortality by age and sex

Morbidity

According to the data from the National Center for Disease Control and Public Health, in the general morbidity structure among population prevail the respiratory diseases, the share of which in the firstly diagnosed diseases is 37.5%, circulatory system diseases – 9.4%, endocrine diseases – 3.5% and also the share of traumas and poisoning in the total structure.

In the age group 0-14, the share of respiratory diseases in the firstly diagnosed diseases is 60%. In the structure of respiratory diseases the highest share comes on the acute respiratory infections of upper respiratory tracts. The prevalence and incidence of respiratory diseases is traditionally high in Georgia, especially among children (41.2% of first time diagnosis). Deaths caused by respiratory diseases among adults in 0.6%, among children – 0.2%.

As for spread of diseases for 100000 inhabitants, by information from 2007, the prevalence of circulatory and respiratory diseases was identical; the incidence in the latter is almost 4 times higher. As for the children of the age group 0-15, the prevalence and incidence of respiratory systems among 100000 is a lot higher here (24013.2 and 22129.3 respectively). Considering the above mentioned the registration of firstly made diagnosis is not perfect. This in the first place concerns the registration of neoplasm and circulatory system diseases, mainly among the adults.

(See attachment 1, tables 3, 4, 5, 6, 7)

Overall Mortality

Mortality rate for 1000 population prevails among males. As for the age groups, the death rate in the age group 55-59 is almost double compared to the age group 45-49 from 4.4 to 8.2 for 1000 population. The validity of the death cause data has declined in the country since the critical decrease of the autopsy material studding since 2000 (according to the data from 2007 only 672 postmortem examinations have been conducted in Georgia, which is 12.3% of the total quantity of the deceased!!!).⁴ Since 2000 the postmortem examination is obligatory only if there is the doubt of serious infection. In all other cases the postmortem examination is conducted because of religious, or other motives, in case of such will of the deceased before death or by the agreement from a relative of the deceased.⁵ As for the cases of death in a house, the procedure is the following: “It is prohibited to issue the death certificate without personal confirmation of death by a doctor; in special cases the death certificate can be issued on the basis of visual examination of the corpse and in that case the coinciding order from a court of prosecutor’s office is necessary”.⁶ In that case the death certificate is issued by the forensic medicine expert and the note written is “cause of death is unknown”. Due to the large quantity of such diagnosis the statistical data is not precise and trustworthy. Furthermore, the quality of filling in the death medical certificate needs to be noted. Despite the positive changes in that direction there are still a lot of mistakes in view of correct registration of deaths.

(See attachment 1, tables 8, 9, 10 11)

⁴ Health and Healthcare, Georgia; Statistical yearbook, 2007; www.ncdc.ge

⁵ Georgian law on healthcare; www.moh.gov.ge

⁶ Normative Decree of the Ministry of Labor, Health and Social affaires, №54/N, 2003; www.moh.gov.ge

Cardiovascular Diseases

Priority in the global strategy of the World Healthcare Organization is the prevention and control of non-communicable diseases due to the high rate of morbidity and mortality. According to the World Health Organization data in 2005 the 30% of death cases in the world (58 million persons) came on the circulatory system diseases and equals to 17.5 million persons. By 2015 the given figure may go up to 20 million.

According to official statistics the share of death cases caused by circulatory system diseases in the general structure of death causes was 67.1% in 2006 and 66% in 2007.⁷

According to the 2005 national report on “Health Condition of Georgian Population” the main cause of death again were the circulatory system diseases (*See attachment 1, table 12, 13*).

In 2002-2004 67% of deaths among women population in Tbilisi came on circulatory system diseases and among men 59.2%.

According to the available data the source for information about the sex and age-specific causes of death is the research of death causes among Tbilisi population of 2002-2004. Research has shown that the leading cause of death among women of the higher age (70 and higher) was the ischemic heart disease. As for the men the given priority is seen during the age of 50 and higher.

According to the World Health Organization data the healthy life expectancy (HALE) in our country is 58.2 years, which is a lot lower then the figure in south-eastern countries (Bosnia and Herzegovina – 63.7; Bulgaria – 63.4; Croatia – 64.0; Slovenia – 66.9; Macedonia – 64.9; Yugoslavia – 64.3), although it is higher then the figure of other neighboring countries – for example – Azerbaijan (55.4) and Russian Federation (55.5). It is slightly lower then the figure in Turkey (58.7) and Armenia (59.0).

During 2000-2007 there was the tendency of the increase in the number of circulatory system diseases, which in return resulted in the increase of incidence and prevalence figures.

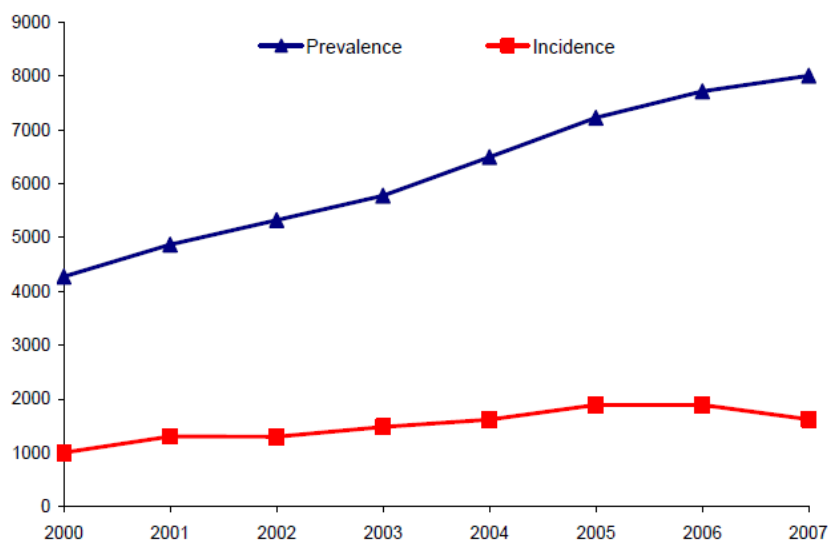


Figure 3 Diseases of the circulatory system, morbidity rates per 100000 population, Georgia 2000-2007

As shown on the Graph 3, the increase in prevalence is significantly rapid, which can be caused not only by the increase of total number of the diseased, but also by the improvement in registration of the diseased, compared to previous years.

⁷ Health and Healthcare, Georgia; Statistical yearbook, 2007; www.ncdc.ge

In the structure of circulatory system diseases among adults the leading share comes on hypertonic, ischemia, rheumatism and cerebral-vascular diseases. During 2002-2006 increased both the prevalence and incidence of these diseases.

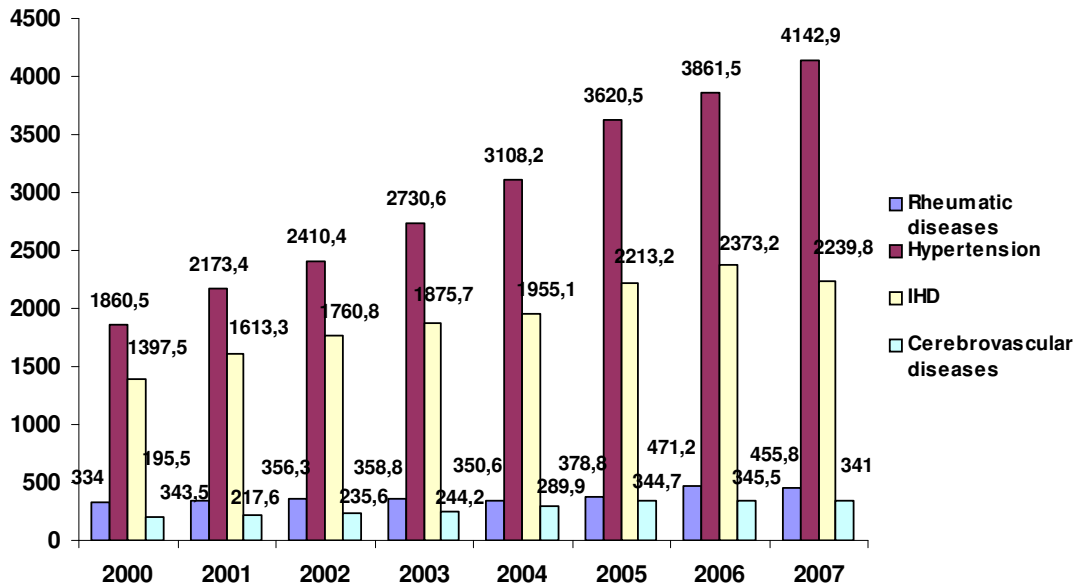


Figure 4 Incidence of circulatory system diseases, Georgia, 2000-2007

During 2002-2006 the increase in prevalence and incidence of these diseases was detected among children also.

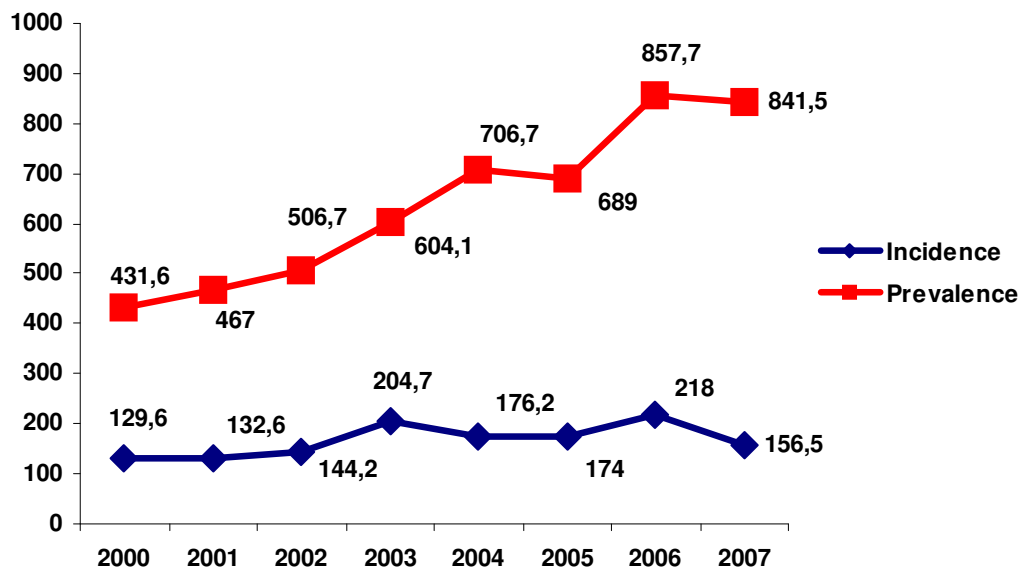


Figure 5 Circulatory system diseases prevalence and incidence among children, Georgia, 2000-07

The reasons for increase in blood circulation diseases among children, along with the world tendencies also maybe the poor social and environmental conditions in Georgia.

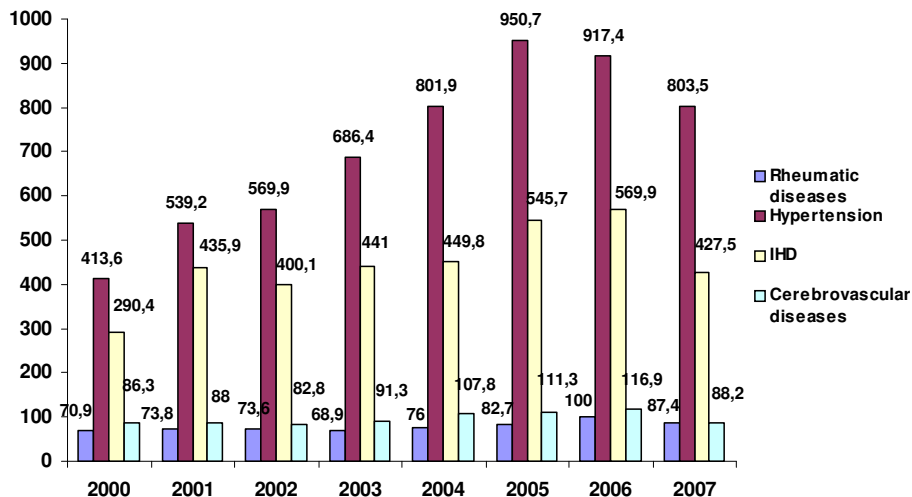


Figure 6 Incidence of circulatory system diseases, Georgia, 2000-2007

As shown on the pictures, the arterial hypertension, as the main risk-factor for ischemic heart diseases and cerebral-vascular diseases and the arterial hypertension as the disease itself shows the trends of aggressive increase, which as a rule must determine on the population level in the country the non-fatal “final spots”, including the certain parallel increase in cerebral-vascular cases. Official statistics does not show the above mentioned parallelism.

Along with that the majority of the main causes of death may be considered as the fatal final spot of arterial hypertension. Although, hypertension itself appears as the cause of death only in 2.2-2.8%, which, we believe, is caused by the procedural imprecise in the verification of the main causes of death. In each of the cases hypertension must be considered as the assumed cause of vascular fatal cases, or accompanying condition, in order for it to be indicated in the medical death certificate, to have its code and for it to be included in the structure of diagnosis. Anyway, hypertension – as the risk-factor and the cause of death must be the subject to discussion for improving the situation with truthfulness of death causes registration, as hypertension is the cause of death only in case of problematic development.

Among adults the highest share in circulatory system diseases comes on hypertension and its percentage during 2002-2007 was 45.3%-50.1%, meaning that almost half of the circulatory system diseases came on hypertensive diseases. Its incidence and prevalence during the same years was:

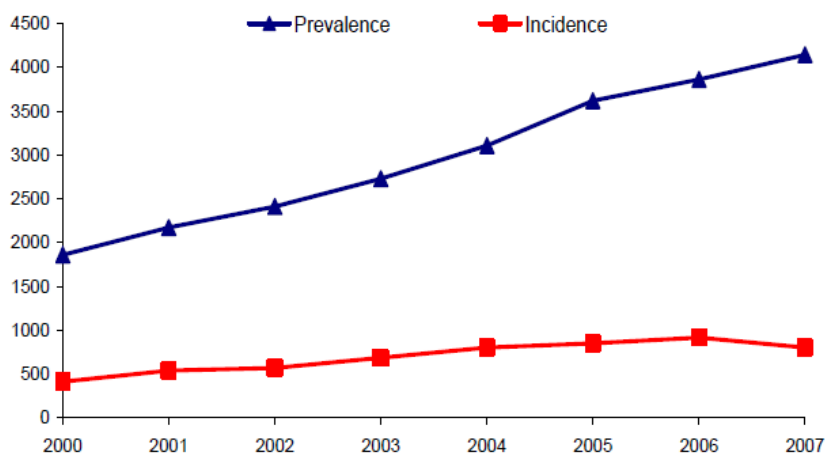


Figure 7 Hypertensive disease, morbidity rates per 100000 population, Georgia, 2000-2007

According to the WHO estimates (2002) Georgia was between those 5 countries of the world (Bahamas, Georgia, Lesotho, Liberia and Maldives); where the numbers of arterial pressure among the population was the highest.

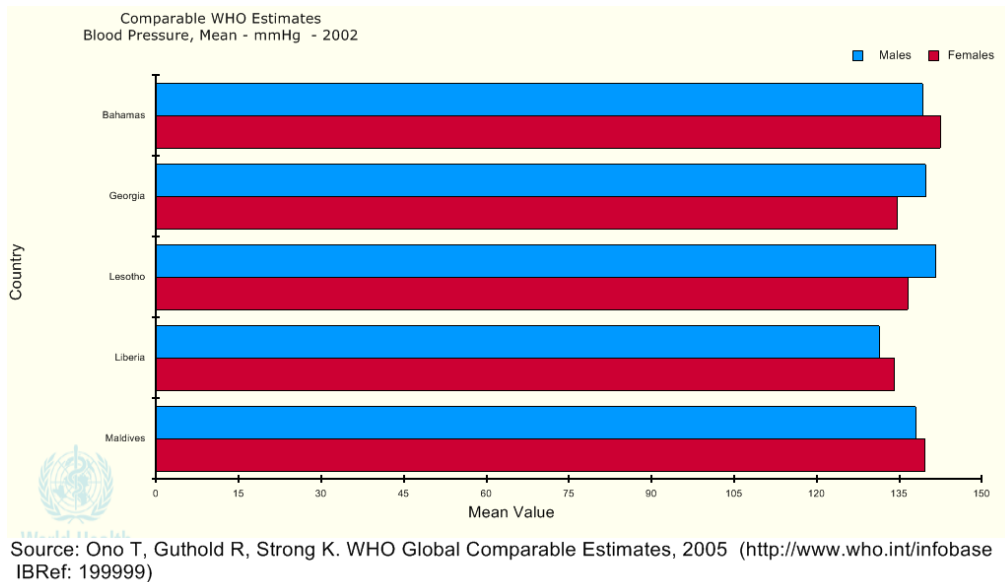


Figure 8 Countries with the highest figures of arterial pressure among population

Academician Tsinamdzgvrishvili State Cardiology Institute has the unique possibility of assessing the dynamics of spread of arterial hypertension during the 60 years, among adult representative groups (18 years and older).

60-year dynamics of arterial hypertension spread in Georgia, Institute of Cardiology

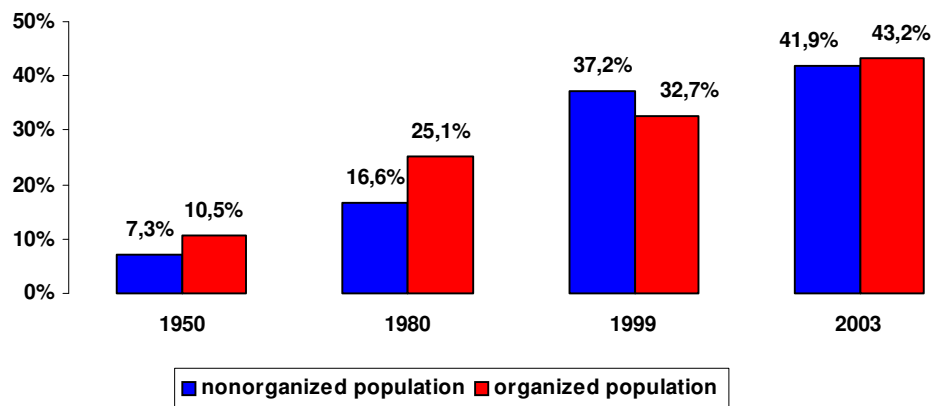


Figure 9 60-year dynamics of arterial hypertension spread in Georgia, Institute of Cardiology

These figures confirm the increase in hypertension spread during approximately 60 years. During 1999-2000, in framework of the State program “Prevention of Circulatory System Diseases”; the department of preventive cardiology researched the organized and unorganized population in different regions of Georgia. Prevalence of AH and IHD (see attachment 1, table 14, 15) differ from official statistics. It is noteworthy that the official statistical data on the circulatory system diseases

often differs from the data received from population studies. As an example we can take the results of the 1985-1990 study, conducted by the Department of Preventive Cardiology of the Institute of Cardiology in Tbilisi and other regions of Georgia among the representative groups (Prevalence of AH - 18%, Prevalence of IHD – 9%), according to the official statistical data of the same years prevalence of arterial hypertension was 5-6%, and prevalence of IHD - 1-8%.⁸

This means, the only possibility to determine the real epidemiological situation in the country should be based on results of representative epidemiological studies.

In 1996 the Georgian Society of Hypertension in collaboration with the Centre for Disease Control (CDC-Atlanta) conducted a study in Adjara and determined the prevalence of arterial hypertension among adults (Batumi, Keda, Khulo) – 26.9%.

5 years later, in 2001, the Department of Preventive Cardiology, in framework of the Prevention of Circulatory System Diseases” State program, studied the prevalence of hypertension in the same regions– 49.8%.^{9,10}

In 1998, Wisconsin Medical College (USA), Milwaukee Healthcare Training International Centre (USA) and the Scientific-Research Institute of Therapy, for studying the prevalence of arterial hypertension, conducted a joint research among city population (Tbilisi, Didube district). The prevalence of AH in the age group 40-65 was 59.9% (females-59.1%, males-62%) in urban population; in village population (Dusheti region) the figure was 40.5% (females-42%, males-37.5%).

This means the prevalence of arterial hypertension in Georgia is quite critical.

According to the WHO 2005 report the total share of arterial hypertension in mortality rate (for 2002), among 10 main risk-factors, was 48.8%. The given figure is higher then that for Azerbaijan and Armenia. See pictures 10 and 11.¹¹

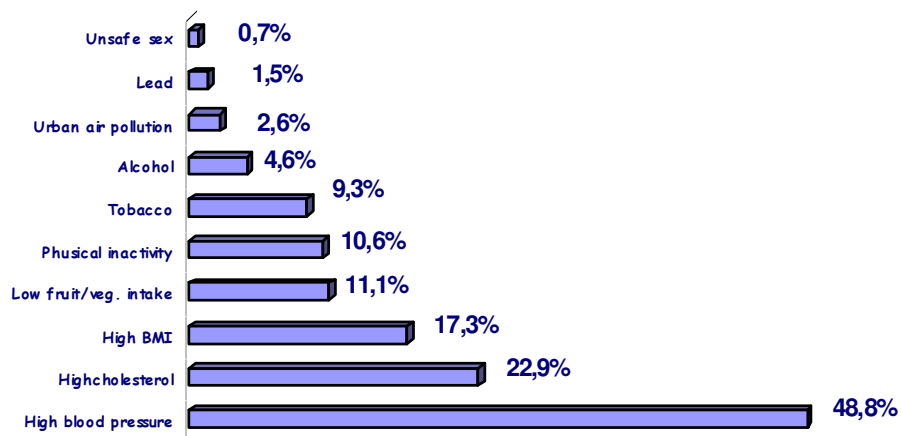


Figure 10 Shares of total deaths attributable to 10 leading risk factors in Georgia, 2002

⁸ Cardiovascular Diseases in Georgia, Japan International Cooperation Agency (JICA), 2001

⁹ Health and Healthcare, Georgia; Statistical yearbook, 1996; www.ncdc.ge

¹⁰ Health and Healthcare, Georgia; Statistical yearbook, 2002; www.ncdc.ge

¹¹ European health report 2005: Public health action for healthier children and populations

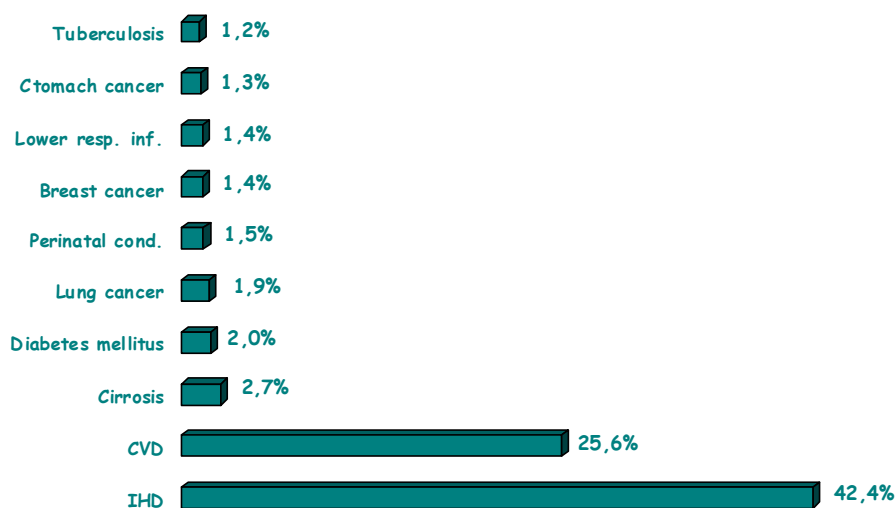


Figure 11 Shares of total deaths attributable to 10 leading diseases in Georgia, 2002

If we consider the above mentioned research data and the fact that among other risk-factors, arterial hypertension is on the leading place in developing vascular catastrophes (brain stroke and heart ischemia), we can understand the prevalence of heart ischemia and brain stroke in Georgia.

Indicators of circulatory system and other disease prevalence and incidence sharply increased from 2000. Compared to 2000, in 2006 the prevalence increased by 1.7 times and incidence increased almost twice (1.96).

During last two years (2005-2007) also sharply increased the rates of cerebro-vascular diseases. During the given period prevalence (344.7 – 345.5) as well as incidence (111.3 – 116.9) was almost the same. During the same years, compared to 2000, the prevalence increased by 1.8 times and incidence by 1.3 times.

Very important scientific activity took place in 2000, when the Swiss-Georgian joint research project “Stroke incidence, risk-factors and patterns in Tbilisi” was conducted.

Standard diagnostic criteria have been used (research continued for 36 months). Fatal cases were researched during 30 days and the results were: ischemic stroke – 19.2%, intracerebral hemorrhage – 48.4%, subarachnoid hemorrhage– 47.8% and unspecified stroke – 69.6%.¹²

Total:

Stroke incidence: 165 (95% CI 145-188)

Ischemic stroke: 89 (95% CI 74-106)

Intracerebral hemorrhage: 44 (95% CI 34-65)

Subarachnoidal hemorrhage: 16 (95% CI 10-25)

Unspecific stroke: 16 (95% CI 10-25)

Risk-factors related to ischemic stroke have been identified – alcohol over dosages, genetic factors, arterial hypertension, diabetes, transitory ischemia cases.

¹² Tsiskaridze et al; *Stroke incidence and 30-day case-fatality in a suburb of Tbilisi: results of the first prospective population-based study in Georgia*; *Stroke*; a journal of cerebral circulation 2004;35(11):2523-8.

The most prevalent was hemorrhagic stroke; lethality is also high. According to the authors, all this is associated to the serious disorders in stroke management in Georgian population.

On the basis of the research results one of the main recommendations is to determine the need for healthcare system reform, according to the real needs of population. Recommendation is to work out the cost-effective intervention action plan for decreasing the burden of strokes, both at individual and population levels and to implement the given plan in the country.

Cancer

Cancer is one of the main causes of deaths around the world. 7.9 million died from cancer in 2007, which is approximately 13% of total deaths. Of high proportional fatality are the pulmonary, stomach, large intestine and breast cancers. 80% of the cancer death cases in 2007 came on low and medium income countries. Its presumed that the number of deaths from cancer will increase and by 2030 will go up to 12 million.

By using the population electronic database of those who died in Tbilisi (of 2002-2004) and by co-funding from the UNFPA municipal program, in 2006 was conducted an epidemiology research.¹³

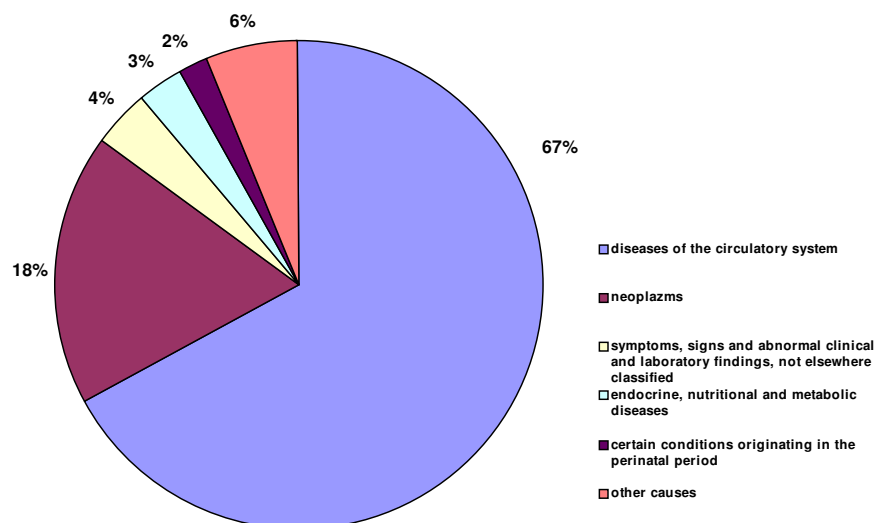


Figure 12 Structure of deaths causes in Tbilisi female population, 2002-2004

By systems in the structure of cancer death of Tbilisi male population is the following: I – digestive system (48.3%), II – respiratory system (46.3%) and III – genital organs (25.8%).

In the structure of Tbilisi female death causes almost half comes on the reproductive system – 45.8%.

In 2002-2004 845 cases of breast cancer deaths were registered meaning that by rough assumption from 100,000 Tbilisi female population every year will die 48.

In the 35-39 years age group breast is the main localization of cancer and it is the main cause of death among Tbilisi females!!! In 30-44 and 50-54 age groups on the second place is the cervix uteri cancer and after 50 years of age the cervix and cervix uteri cancer are on III and IV ranking places.

Among Tbilisi female population breast cancer is at the IV place among 10 main causes of death and its share in female deaths of all ages is 5%.

Among Tbilisi male population lung cancer is at the VIII place among 10 main causes of death. Death

¹³ Structure of deaths causes, 2002-2004; www.cancernet.ge

caused by cancer in both sexes is on the second place after the circulatory system diseases; for females - 18% and for males - 15%.

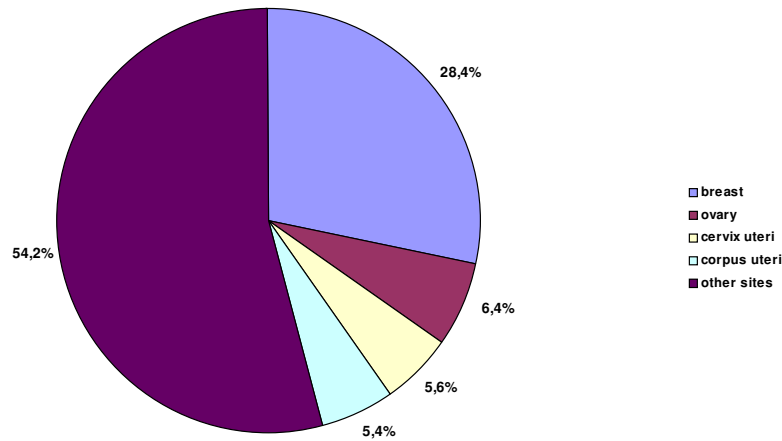


Figure 13 Reproduction system cancer caused death structure (%) among Tbilisi female population, 2002-2004

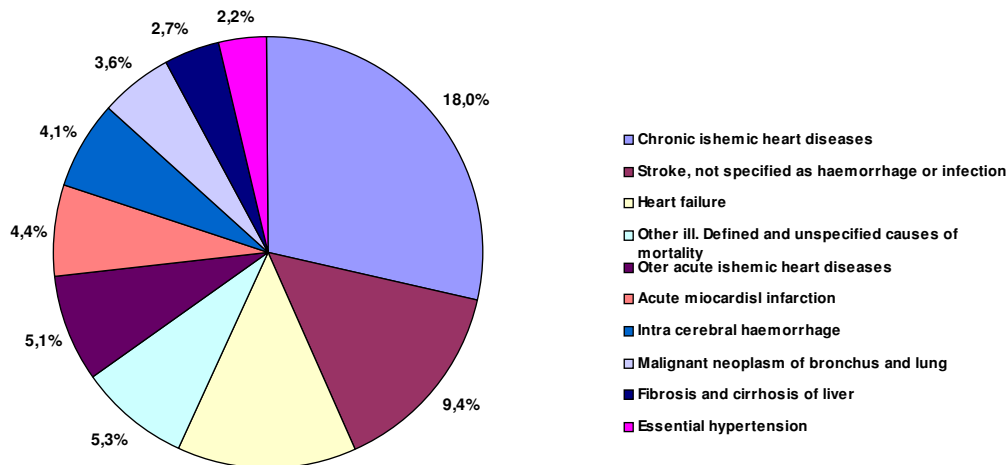


Figure 14 10 main deaths causes among Tbilisi male population, 2002-2004

In the 25-59 age group cancer is the main cause of death in Tbilisi female population!!!

50% from that comes on the reproductive system cancer.

Georgian Ministry of Labor, Health and Social Affaires, JSI – Research and Training Institute (USAID supported) in collaboration with the CDC-Atlanta and NCDC&PH (National Center for Disease Control and Public Health) is conducting the reproductive age mortality study (RAMOS) for the first time in Georgia. Target population are females who died in 2006 at the age between 15 and 49 in Georgia. The pregnant women mortality research questionnaire and the verbal autopsy questionnaire of the World Healthcare Organization are used.

Correct verification of the mortality causes and the analysis of pregnancy related mortality will allow us to identify the barriers, which hamper the introduction of quality healthcare services at individual, population and organizational levels.

According to the NCDC&PH data in 2007, as during last years, in cancer morbidity structure breast cancer in females and lung cancer in males are at the first place.

10 main cancer morbidity structure: breast cancer, lung (trachea, bronchus) cancer, larynx, cervix uteri, stomach, rectum, blood borne organs, prostate, skin cancers.

According to the available information, during last five years the cancer incidence decreased only 0.95 times (from 122 to 115.3) and prevalence increased 1.1 times (from 603.3 to 662.3).

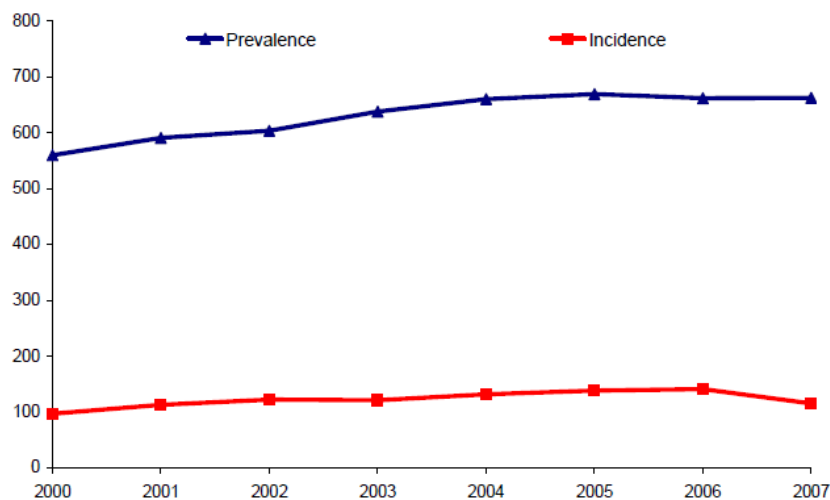


Figure 15 Malignant neoplasm morbidity, rates per 100000 population, Georgia, 2000-2007

The gender structure of cancer incidence shows that for males at the leading places are – lung, bronchus, trachea (29), stomach (11.5), prostate (8.9), larynx (7.5), rectum (6.2), blood borne organs (5.7); among females the picture is as follows: breast (40.9), cervix uteri (10.9), stomach (5.8), rectum (4.4) and blood borne organs (3.8) cancers.

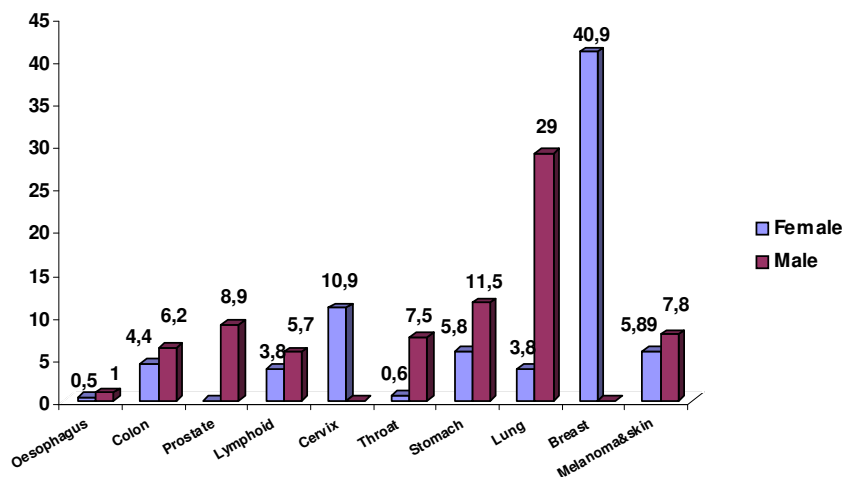


Figure 16 Main localization cancer incidence by sex, 2007

During 2003-2007, incidence increase was detected for cervix uteri cancer among females and prostate cancer among males. It is noteworthy that breast cancer incidence have been high and at the first place for many years. In 2007 the decrease of breast cancer and throat cancer incidence was detected. Incidence decrease was significantly seen in cases of breast cancer, which went down to the figure detected in 2001. The given fact allegedly was caused by the low number of visits by patients to health care facilities due to the hard social-economic and political situation in the country. It is doubtful that the incidence decrease was caused by real decrease in morbidity.

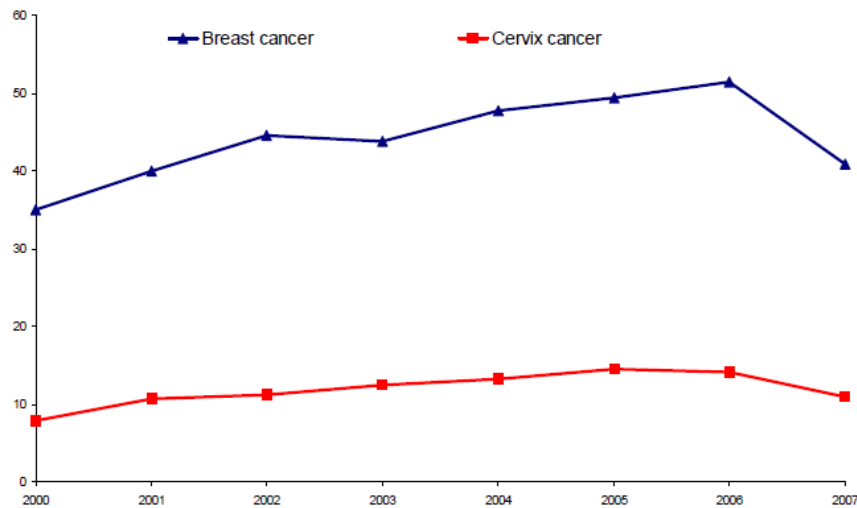


Figure 17 Malignant neoplasm's of breast and cervix uteri, incidence rate per 100000 women, Georgia, 2000-2007

When analyzing the breast cancer age-specific incidence rates, it can be seen that the increase in breast cancer morbidity among females starts from earlier ages (30-34 years) and it achieves maximum at the age of 55-60. After achieving the maximum the morbidity decreases. By information from other countries (for example the USA), the incidence of the breast cancer increases till the end of life. The decrease of breast cancer incidence in Georgia in later ages (after 65-68 years of age) can hardly be explained. It may be the result of incomplete registration and low level of hospital attendance.

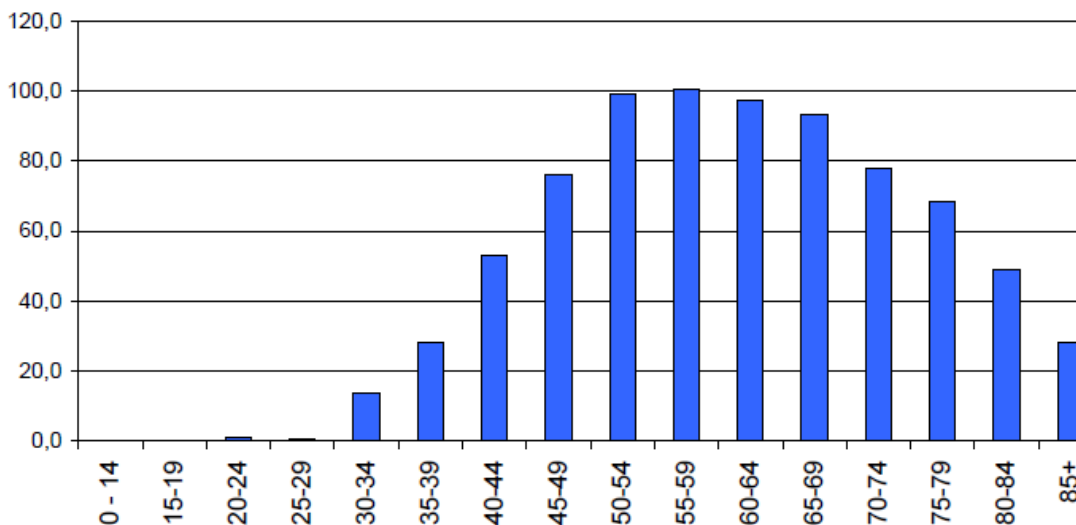


Figure 18 Age specific incidence of the breast cancer, rates per 100000 women, Georgia, 2007

By prevalence the breast cancer is at the first place (193.3). The figures are also high for the reproductive organs cancers (119.08), skin (including melanoma) (74.1), digestive organs (66.1), respiratory and intrathoracic organs (61.07), Lymphoid, haematopoietic and related tissue (34.6). Incidence and prevalence comparison allows us to assess the mortality and survival rate of cancer. High prevalence of skin cancer, in parallel with low incidence indicates the high survival rate. Respiratory and intrathoracic organs cancer has low survival rate and is only 5-th prevalent cancer, despite the high incidence.

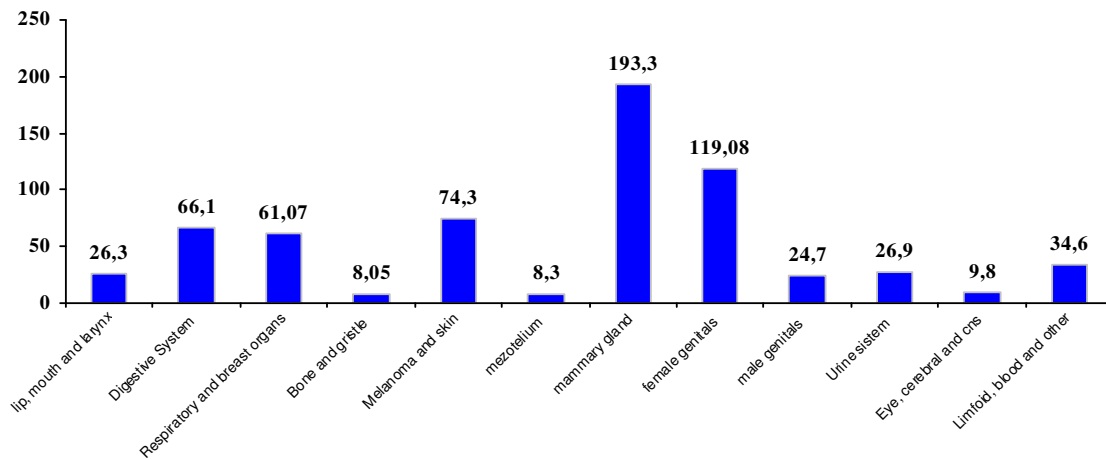


Figure 19 Main localization cancer prevalence, 2007

In Georgia, the indicator of 5-year survival rate from cancers is 45.1%. It is relatively high for the melanoma and skin cancers (55.7%), breast cancer (53.1%), lip, oral cavity and pharynx organ cancers (52.1%). The survival rate for respiratory and intrathoracic organs cancer is only 40.0%. Significantly low is the survival rate for the Mesothelial and soft tissue (27.4%), nervous system (22.8%), Lymphoid, haematopoietic and related tissue (16.3%)

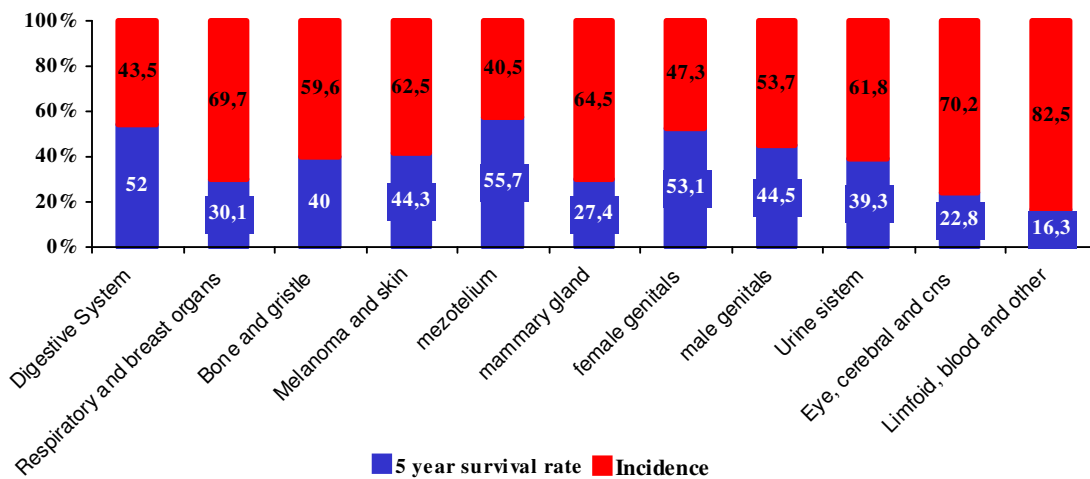


Figure 20 Proportion of patients during five years and over by means of malignant cancers

In the developed countries, the 5-year survival rate from cancer is of 50-60%, and the world average indicator is 30-40%. The breast cancer 5-year survival rate in the USA is over 80%, in Europe – 70%, in China 60% and in Georgia 53.1%.

Majority of the cancer patients are hospitalized in Tbilisi (almost 80%). Part of them has been hospitalized in Batumi and Kutaisi. Majority of the children with cancer diagnosis are being hospitalized in Tbilisi.

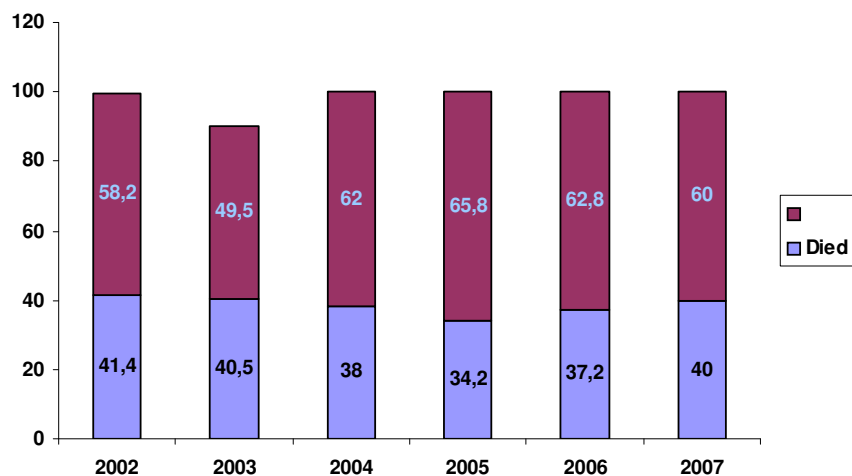


Figure 21 Share of the patients deceased in one year after the diagnosis of malignant cancer

The mortality rate from malignant cancers in Georgia remains high. This is proven by the fact that during the accounting year, the fatality among patients registered for the first time is very high during last 5 years. One of the main reasons of the high mortality rate is that there is a grave situation in the country by means of determining the disease at the starting stage. In 2008 the women's cancer screening program has been initiated. In 2007 only 4.1% of the patients received diagnosis at the first stage of the disease, 21.5% at the II stage, 23.2% at the III stage and the remaining 45.2% received diagnosis at the 4th stage. The data are a lot worse compared to the data from 1998, which is quite alarming and is a serious problem for public healthcare.

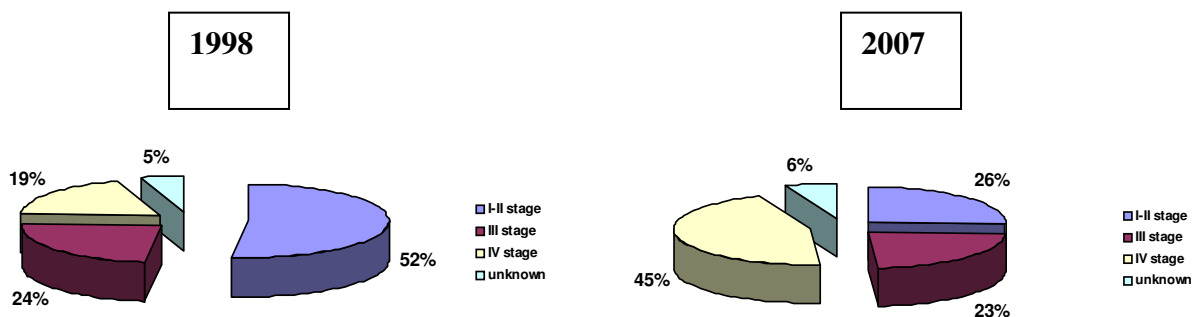


Figure 22 Distribution of new cases of malignant neoplasm's by stages of the disease (%), 1998 & 2007

Diabetes Mellitus

It has been proven that the diabetes mellitus is wide spread throughout the world (160 million people). Additionally, the figure increases rapidly every year. It is presumed that the figure will double by the year 2015 (300 million people). The above mentioned fact and the fact that diabetes mellitus cannot be cured make the disease one of the biggest medical-social problems in the world.

There is no precise information about the spread of diabetes mellitus in Georgia because no epidemiological research has been conducted in the country. That is why we are forced to base on the so called secondary data.

During the “Soviet” period, the anti-diabetes medicines were being supplied by State funding and by the then information (of 1989) the number of diabetes mellitus patients was 90 000. It is apparent that despite the enormous expenses throughout the world the trend of increase remains (for example 4.7% in the USA). Naturally, in the country in which during 5 years (1990-1995) no State interferences has taken place by means of diabetes mellitus prevention and considering that the country was in permanent stress condition (which is one of the provocators of the pancreatic diabetes disease), the increase of the cases of diabetes mellitus is explainable.

The number of the diseased with diabetes mellitus should have increased by the world trends (every year plus – 2-4%), which means that by the year 2003 (during 13 years, minimum 2% per year) the figure should have been 112 400. By official statistics in 2003 in Georgia 52504 patients were registered with diabetes mellitus. 15 765 from those were insulin users.

According to the NCDC&PH data during 2000-2004 the proportion of prevalence of the diabetes mellitus in endocrine, nutritional and metabolic diseases was not more than of 37-39% and the proportion of incidence was 17-24%. In 2005 the average prevalence was 40%; in 2006 it increased to 47%. During 2005-2006 the incidence of diabetes mellitus increased to 30%. The increase of the share of the diabetes mellitus in endocrine, nutritional and metabolic diseases during the last two years may be caused by the increase of the diabetes mellitus cases and also by the decrease in the number of other endocrine, nutritional and metabolic diseases. (See attachment 1, table 16).

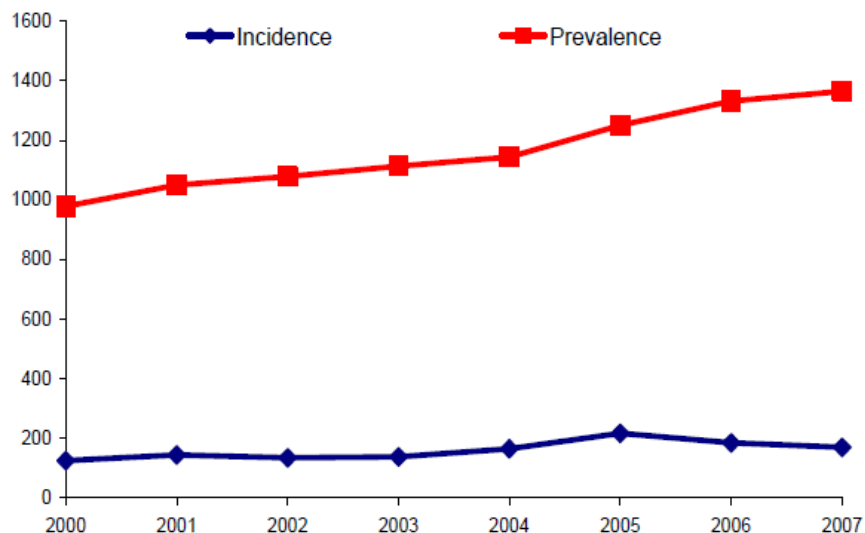


Figure 23 Diabetes mellitus morbidity, rates per 100000 population, Georgia, 2000 – 2007

We must mention the problem of obesity in Georgia during those years. The increase of such cases is registered every year among adults. (it is noteworthy that we do not have the statistics data for obesity for the years of 2002 and 2006). From the year 200 through 2005 the new cases of obesity have increased 1.65 times.

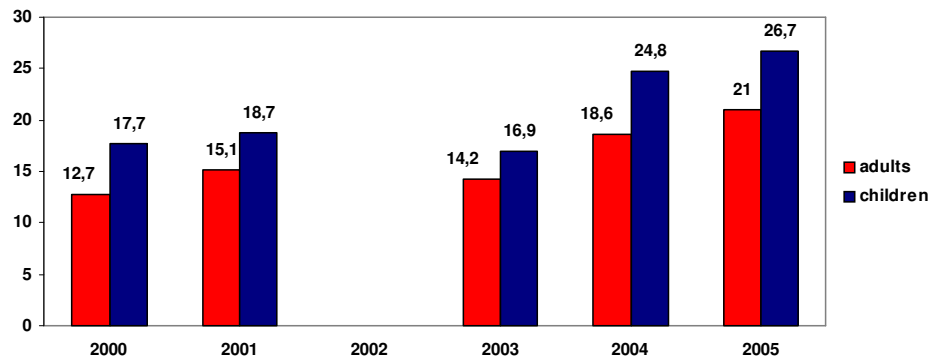


Figure 24 New cases of obesity among adults and children, 2000-2005

There is the trend of obesity case increase among the children of the age of 0-14 also. The obesity cases during 2000 through 2005 have increased 1.51 times.

Both physical inactivity (which is the general problem for many developed countries throughout the world) and inappropriate nutrition can be considered as the reason of the obesity cases increase among children.

According to the NCDC&PH data prevalence of diabetes mellitus has increased 1.4 times during 2000-2007.

The prevalence of insulin-related (type 1) diabetes mellitus has increased 1.25 times and of the insulin non-related (type 2) pancreatic diabetes has increased 1.42 times. It is noteworthy that compared to 2003 in 2004 the type 1 diabetes prevalence was decreased 0.96 times.

Incidence of the diabetes mellitus has increased 1.35 times from 2000 to 2007. It is noteworthy that compared to 2005 in 2007 the given indicator has decreased 1.27 times.

Type 1 diabetes incidence has increased 1.12 times from 2000 to 2007 and type 2 diabetes incidence by 1.52 times during the same years. Type 1 diabetes incidence has decreased 1.83 times in 2006 compared to 2005. In 2007 the given indicator increased 1.01 times compared to 2006.

As we have mentioned the type 2 diabetes incidence has increased 1.52 times from 2000 to 2007. The trend is different, namely, the incidence increased rapidly (1.4 times) in 2005 (compared to 2004), in 2006 decreased 0.85 times compared to 2005 and in 2007 decreased 1.14 times compared to 2006.

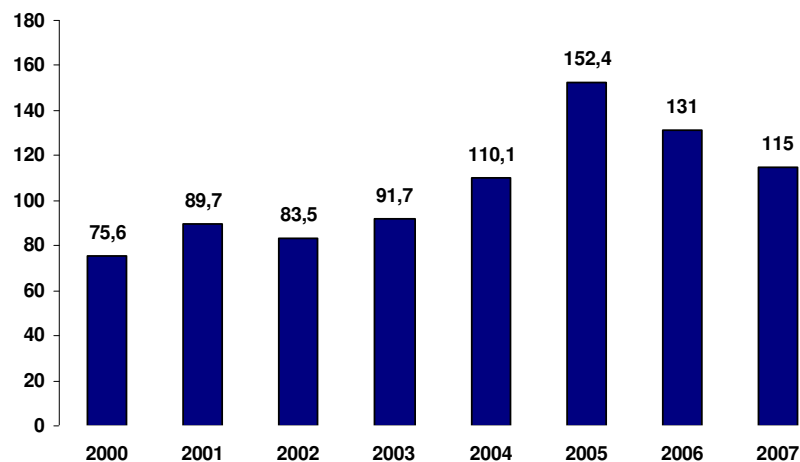


Figure 25 Type 2 Diabetes Mellitus incidence, 2000-2007

In order to determine the reasons for increase of diabetes mellitus incidence we must pay attention to such factors, which allegedly are the provokers of the disease, namely: inappropriate nutrition, obesity, smoking, alcohol abuse, hypertension, intolerance to glucoses, stress, low immunity, infectious diseases and etc. Special attention should be paid to the quantity of micro-nutrients and microelements in the food. According to specialists, following microelements are important in diabetes mellitus pathogenesis: *Chrome, Vanadium, Copper, Selenium, Molybdenum, Manganese, Silicon*. These factors should be specially considered in such families with diabetes mellitus anamnesis (member of family has or was diseased with this disease). It is necessary to increase the propaganda of healthy lifestyle promotion in the diabetes mellitus prevention.

Diabetes mellitus development among 0-14 age children during 2000-2007

At the end of 2007, 263 children were diagnosed with diabetes mellitus; from those 208 with Type 1 diabetes and 55 children with Type 2 diabetes.

Type 1 diabetes is mainly prevalent in children, the prevention of which does not exist at all. If a member of a family is diseased with this type of diabetes we must try to make a child healthier, strengthen his immunity, and pay attention to the presence of above listed microelements in food to reduce the risk.

Statistics show that from 2000 through 2007, among 0-14 age children the number of new diabetes mellitus cases increases. The only exception is 2003, when the incidence decreased 1.75 times compared to the previous year and the year 2007, when it decreased 1.02 times compared to the previous year. In 2005 diabetes mellitus incidence among children increased 2.15 times compared to 2003. From these approximately 88% was Type 1 diabetes (8.9). In 2006 the given indicator increased 1.12 times and stood at 11.3. From those approximately 77% came on the type 1 diabetes (8.7). In 2007 the incidence decreased 1.25 times compared to 2006 and stood at 9.0. From those 85.5% came on the Type 1 diabetes (7.7).

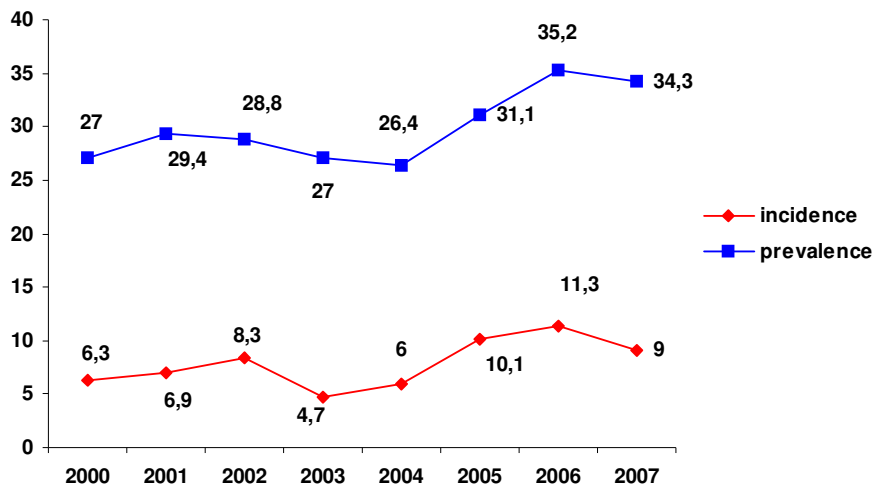


Figure 26 Diabetes mellitus morbidity among 0-14 age group children, Georgia, 2000-2007

We should mention the high prevalence of the thyroid gland pathology among Georgian population. Official data shows it apparently. (See attachment 1; table 17, 18, 19).

There are lots of endemic places in our country.

Respiratory Diseases

Cough is mentioned among the three main reasons of medical care demanding along with high blood pressure and angina's pain; the most frequent diagnosis in PHC are of bronchitis along with arterial hypertension and ischemic heart disease.¹⁴

42% of chronic diseases severe phase and general acute diseases comes on the respiratory diseases.

Cancer of respiratory diseases system is at the 8th place in the death causes structure of Tbilisi (both female and male) population during 2002-2004.¹⁵

By the same data, cancer of respiratory system is at the second place in the list of death causes of Tbilisi male population – 46.3%. Lung cancer is at the eighth place in the list of 10 main death causes of the male population.

By official statistics (NCDC&PH) the situation with the respiratory system diseases is as follows (*See attachment 1, table 20*).

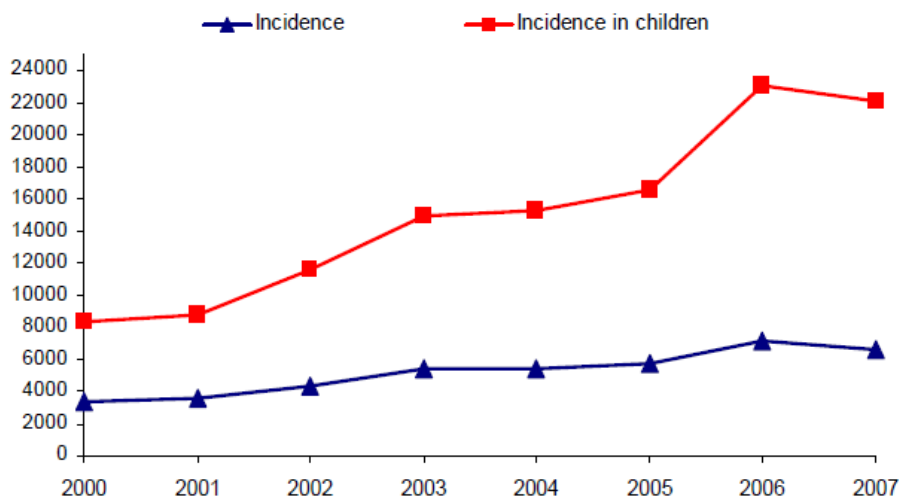


Figure 27 Incidence of diseases of the respiratory system, Georgia, 2000 – 2007

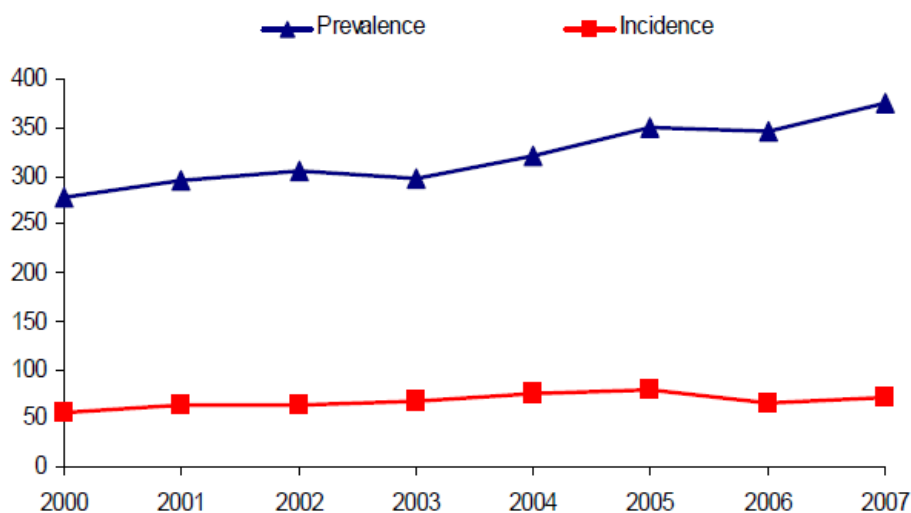


Figure 28 Bronchial asthma, morbidity rates, Georgia, 2000 – 2007

The structure of the respiratory system diseases shows that the most prevalent pathologies in the adult

¹⁴ Primary Healthcare Reform Monitoring Project; Georgian Society of Hypertension, 2008

¹⁵ Household Survey on Health Service Utilization and Expenditure (HUES), 2007

population and among children are the upper acute respiratory infections - 51% & 61% accordingly, influenza and pneumonia -12%, chronic lower respiratory diseases - 10%.

Increase of prevalence and incidence may be caused by the activation of medical care demand, improvement of the registration process and activation of different coinciding programs.

By official statistics prevalence of the chronic obstructive pulmonary disease (COPD) is very low. First of all, the COPD similar definition in the *Georgian List of Standards* is “Other Obstructive Pulmonary Disease”. Medical doctors are forced to use diagnoses, such as, chronic imprecise bronchitis and emphysema.

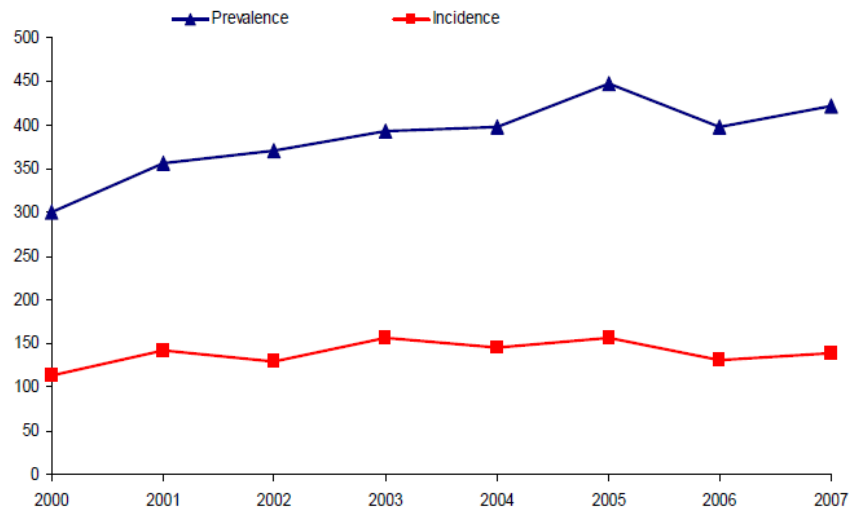


Figure 29 Chronic and unspecified bronchitis, morbidity rates, Georgia, 2000 – 2007

In 2006 the

Georgian Respiratory Association conducted the research – Chronic Respiratory Diseases at the Primary Healthcare Level of the Country – (WHO.GARD, ARIA – Allergic Rhinitis and Its Impact on Asthma).

Research results showed that majority of the persons younger then 45 years are diseased with COPD. Its frequency at the primary healthcare level makes us presume the higher prevalence of COPD in Georgia, then by official statistics.

Authors believe that these differences are also reasoned by the bad knowledge of COPD symptoms by doctors, deficit of usage of spirometry for diagnosing, which means non-consideration of COPD diagnosis and management guidelines. Spirometry proved the acuteness of diseases among the surveyed patients. Patients appeal to the medical institutions at the later stages of the disease, when serious changes in the quality of life are already visible.

COPD is the important healthcare problem, including young males. Due to the high frequency of diseases and frequent usage of healthcare resources it is necessary to conduct the study among the country population, wider usage of spirometry for earlier diagnosis and prevention.

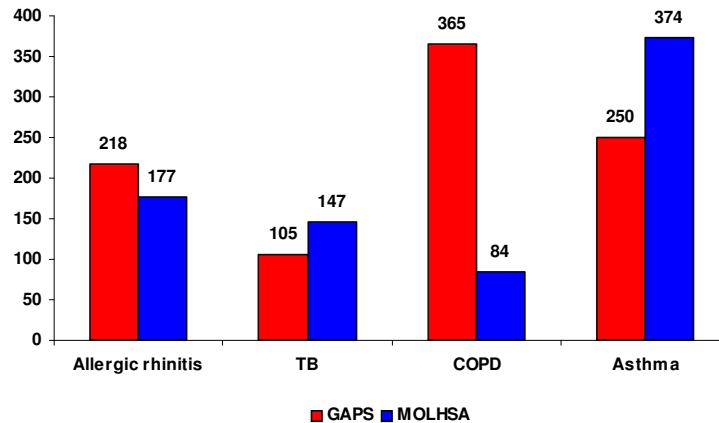


Figure 30 Respiratory problems by GAPS and MoLHSA statistics

In general, epidemiologic studies and preventive programs at the working places are important, as they allow us to determine risk-factors and the spectrum of diseases in the organized population.

The study of the chronic obstructive pulmonary disease (COPD) among the bread factory employees is very interesting, the aims were: to study COPD prevalence, early detection, assessment of disease monitoring criteria's; and working out preventive measures. It appeared that 5.4% of bread factory employees have COPD and 25.4% - respiratory problems.

Certain professional factors in the bread factories (oil burning products, flour dust) promote the respiratory pathology.

Main recommendations from the project are:

For COPD prevention it is necessary to conduct the screening research among bread factory employees with clinical symptoms, especially among smoker men on the basis of anamnesis and examination. It is also recommended to identify risk-groups and conduct spirometry examination; In case of unavailability of the latter - to do peak flow meter with pharmacodynamic tests.

Georgia was among the 156 collaborates, which conducted all the phases of the international study of asthma and allergies in childhood during 1995-2003 (The International Study of Asthma and Allergies in Childhood – ISAAC). The study started for standard research of asthma, allergic rhinitis and emphysema.

Data on the spread of respiratory diseases among Georgian population, their existence in the spectrum of problems of medical care appealability, screening indicators identified during the conducted study, show the immediate need for strengthening the active identification segment in the country, by means of activating any available resources.

Injury, Poisoning and Certain Other Consequences of External Causes

Society faces serious losses by means of human, financial and other resources, which are related to traumas. 5 million die every year as results of traumas throughout the world. According to the WHO 2 000 people die in Europe everyday due to traumas, 60 000 people daily admit to hospitals and 600 000 are in need of emergency outpatient care. Traumas are one of the main causes of death for the persons of the age group 5-44.

Injury, poisoning and certain other consequences of external causes play serious role in the incidence structure. According to the MCDC&PH data in 2006, by incidence rates injury, poisoning and certain other consequences of external causes are at the eleventh position; and in the list of death cause as well as hospital lethality they at the fourth place.

28 715 cases (incidence - 654.3) of injury, poisoning and certain other consequences of external causes have been registered in Georgia in 2007.

Considering the specifics of injury, poisoning and certain other consequences of external causes it is very important to analyze their prevalence and characteristics. The dynamics of incidence during 2000-2007 is as follows:

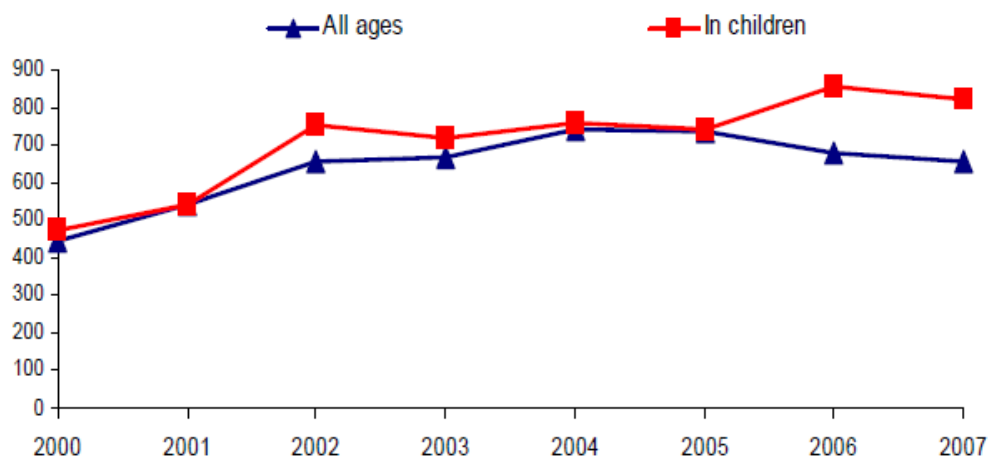


Figure 31 Injury, poisoning and certain other consequences of external causes, incidence rates, Georgia, 2000 – 2007

Share of deaths from external causes was quite high during 2002-2004: girls – 14.8% and boys – 30.4%. (Death causes in Tbilisi, 2002-2004).
(See attachment 1, tables 21, 22, 23, 24).

Risk-factors

Available data shows that the burden of non-communicable diseases in Georgia is quite high and continues increasing. Due to this, effective interventions, including implementing of effective population preventive strategies should be activated. Adequate assessment of the structure and prevalence of the main risk-factors of the non-communicable diseases is the important factor for the effectiveness of preventive measures. Despite some studies that have been conducted in Georgia, the data about risk-factors of non-communicable diseases are still insufficient. There is certain information about arterial hypertension prevalence, tobacco and alcohol consumption. But there's minimal data about the blood cholesterol, blood glucose, physical activity. Official statistics (National reports from the Department of Statistics, Georgian Ministry of Health, reports from NCDC&PH) on non-communicable diseases risk-factors prevalence is limited in Georgia. Informational value of the separate, small scale studies is low due to the lack of surveyed indicators and inadequate instruments usage.

According to the European Health Report (2005)¹⁶, share of risk-factors in the mortality in Georgia was assessed as follows:

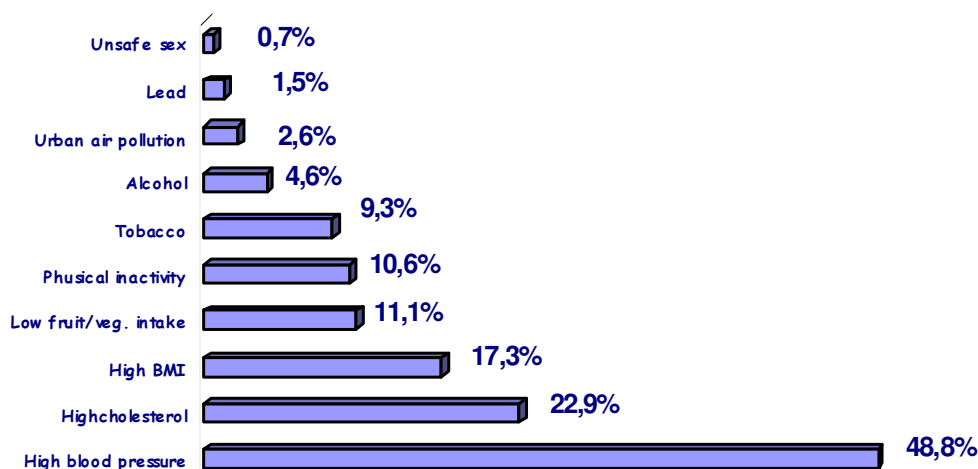


Figure 32 Shares of total deaths attributable to 10 leading risk factors in Georgia, 2002

¹⁶ European health report 2005: Public health action for healthier children and populations

Arterial Hypertension

According to the National Center for Disease Control and Public Health the spread of arterial hypertension increases in the country.

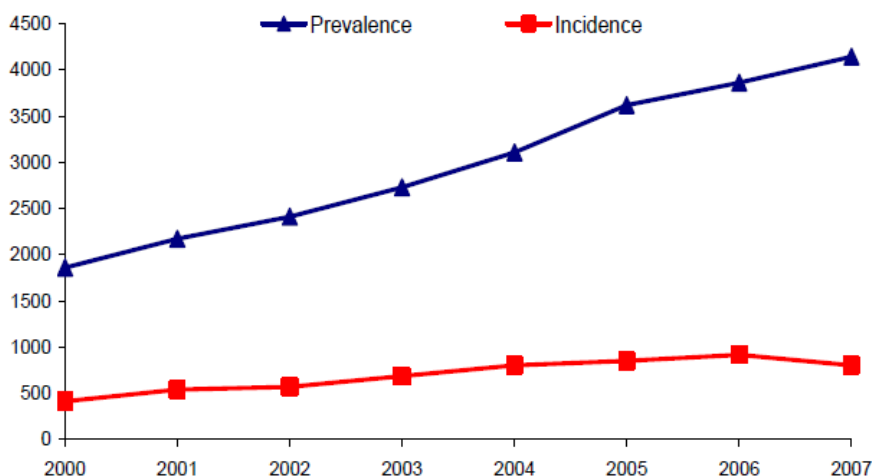


Figure 33 Hypertensive disease, morbidity rates per 100000 population, Georgia, 2000- 2007

In the national report ‘the health situation in Georgia 2004’ of the Ministry of Labor, Health and Social Affairs (MOLHSA) of Georgia it is said “during the last few years especially alarming is the permanent increase prevalence of arterial hypertension, which must be reasoned by the activation of relatively new risk-factors for the population, such as poverty, inadequate nutrition, tobacco and alcohol abuse, stress condition and etc”.¹⁷

In the national report ‘the health situation in Georgia 2005’ of the MOLHSA it is again noted that “permanent increase of the prevalence of arterial hypertension is detected during last years. Hypertension disease stands at 50.1% in the structure of registered cardiovascular diseases”.¹⁸

According to the report of the NCDC&PH “Trends of the development of circulatory system diseases in Georgia during 2002-2006”- prevalence and incidence of hypertension disease have rapidly increased during the mentioned years. In 2006 prevalence reached 3861.5 and incidence went up to 917.4. Hypertension disease leads the list of circulatory diseases mostly prevalent among adults, it’s percentage during 2002-2006 was between 45.3-50.1%, meaning that more than half of the circulatory diseases came on hypertension. Both prevalence and incidence of the hypertension disease increased rapidly during last years: prevalence increased twice and incidence increased 2.2 times. Hypertension disease prevalence increased in almost all countries of the world.

According the WHO estimates (2002) Georgia was between those 5 countries of the world (Bahamas, Georgia, Lesotho, Liberia and Maldives); were the numbers of arterial pressure among the population was the highest.

Probably, the real situation is even worse as the official statistical data is mainly based on the admissions to medical institutions. Because of the deficit of preventive measures share of active identification of arterial hypertension is low.

Important information is provided by the health monitoring study (pilot) conducted by the CINDI Georgia in Tbilisi in 2001 along with the study of health related behavior conducted in Tbilisi Didube-Chugureti district (demonstration area). Also the project implemented by the American International

¹⁷ National report on the health status of Georgian population; MoLHSA, 2004

¹⁸ National report on the health status of Georgian population; MoLHSA, 2005

Health Association (AIHA)¹⁹ is very important, according to which prevalence of hypertension in the 40-65 age group is approximately 50%. These and other projects allow us to conclude that prevalence of non-communicable diseases risk-factors including hypertension, is increasing.

Of great importance is the “non-communicable diseases risk-factors study in Georgia” conducted under the two-year cooperation of the MoLHSA and of the WHO European Regional Office (2006-2007).²⁰ In framework of the given study, the prevalence of arterial hypertension among Tbilisi adults (25-65 years) was studied.

According to the study:

- Prevalence of actual and potential hypertensives take into consideration respondents whose systolic blood pressure was at least 140 mmHg or diastolic blood pressure was at least 90 mmHg or who reported that they are currently (last 2 weeks) taking medication to lower their blood pressure. 33.9% of respondents are considered as actual and potential hypertensives. The highest numbers were detected in the age group 55-65 – 67.4% (62% male and 72.3% female);
- Mean systolic blood pressure was 124.9±19.0 mmHg (male 127.9±17.1 and female 137.6±21.1). Mean diastolic blood pressure was 80.1±11.5 mmHg (male 81.9±11.0 and female 78.3±11.6). Mean pulse was 76±7.3 (male 76.6±7.4 and female 75.4±7.2);
- 38.2% of survey participants (male 27.5% and female 48.4%) have normal BP; 38.4% (male 47.3% and female 30%) were prehypertensives; 23.4% (male 25.2% and female 21.6%) were hypertensives; 14.5% were hypertensives stage 1; 8.9% were hypertensives stage 2; 5% had isolated systolic hypertension (JNC VII)²¹

Indicators were used for assessing the arterial hypertension control, awareness and treatment adequacy. Analysis of the obtained data showed that:

- 84.5% of respondents have measured their blood pressure during the last 12 months;
- 33.7% of survey participants have ever been told by physician that they have high blood pressure;
- Prevalence of actual and potential hypertensives take into consideration respondents whose systolic blood pressure was at least 140 mmHg or diastolic blood pressure was at least 90 mmHg or who reported that they are currently (last 2 weeks) taking medication to lower their blood pressure. 33.9% of respondents are considered as actual and potential hypertensives. The highest numbers were detected in the age group 55-65 – 67.4% (62% male and 72.3% female);
- 66.2% of the actual or potential hypertensives reported that they have been told by a health professional to have elevated blood pressure (or hypertension);
- Among the not aware hypertensives there are respondents with first time detected Hypertension (BP ≥ 140/90) – 31.4%, respondents who knew that had BP ≥ 140/90, but did not take drugs – 12.3%, and respondents who knew that had BP ≥ 140/90 and took drugs – 56.3%;
- Mean systolic blood pressure was 124.9±19.0 mmHg (male 127.9±17.1 and female 137.6±21.1). Mean diastolic blood pressure was 80.1±11.5 mmHg (male 81.9±11.0 and female 78.3±11.6). Mean pulse was 76±7.3 (male 76.6±7.4 and female 75.4±7.2);
- 38.2% of survey participants (male 27.5% and female 48.4%) have normal BP; 38.4% (male 47.3% and female 30%) were prehypertensives; 23.4% (male 25.2% and female 21.6%) were hypertensives; 14.5% were hypertensives stage 1; 8.9% were hypertensives stage 2; 5% had isolated systolic hypertension;
- 21.7% of surveyed population use antihypertensive drugs;
- 84.2% of hypertensives (male 74.7% and female 92.5%) use antihypertensive drugs; 65.1% of

¹⁹ American International Health Alliance Project

²⁰ Non-communicable Diseases Risk-Factors Survey; Georgia, 2006-2007; www.ncdc.ge

²¹ www.nhlbi.nih.gov/guidelines/hypertension/jnc7full.pdf

actual and potential hypertensives (male 52.2% and female 76.1%) are on antihypertensive drug treatment;

- Antihypertensive drug treatment was effective just in 46.2% (male 38.9% and female 50.4%);
- 41.2% of population taking antihypertensive treatment were advised by physician; 24.8% by friends/relatives; 26.2 took medicine by him/herself;
- 83% have got their own blood pressure measurement device; 87.9% thinks they have BP measurements skills; but just 60.7% know what does “normal BP” means;
- 29.7% were advised about non-pharmacological treatment by physician; 19.7% have tried to change their lifestyle; 17.9% were successful in this attempt;
- 46.7% of respondents mentioned that they had been used different antihypertensive medications from time to time;
- 656 respondents mentioned only one medications and 496 – two or more medications (among them 328 respondents mentioned only 2 medications, 118 –3 medications, 32 – 4 medications and 18 – 5 medications);
- In total, respondents were mentioned 123 antihypertensive medications and 41 of them were not antihypertensive drugs. 142 respondents consider mistakenly as antihypertensive other medications and took to lower blood pressure, mostly aspirin, corvalol, valeriana, preductal, mildronat and other analgetics, tranquilizers, statins;
- In the list of used 7 medications were used more frequently: Adelphane – 281 respondents (24%), Raunatine – 273 respondents (24%), Clopheline – 164 respondents (14%), Enap H - 121 respondents (11%), Papazoli – 86 respondents (7%), Nifedipine – 61 respondents (5%), Korinfar – 59 respondents (5%);
- 46.3% of respondents mentioned use of non-recommended drugs, 18.3% - ACE inhibitors, 11.8% - Calcium Channel Blockers, 8.2% - Beta Blockers, 0.1% - AR Blockers and 15.3% - Diuretics (but these are mostly in combination with other classes, Hydrochlorothiazide as medication mentioned only 8 respondents.

Based on the available data we can see the necessity to decrease prevalence of arterial hypertension in the country, to immediately work out and implement the effective control measures.

Blood Cholesterol

Information about the population blood cholesterol level is minimal. Official statistics sources do not provide information about the hypercholesterolemia prevalence.

Blood cholesterol was studied in framework of the study of health related behavior in Georgian Adult Population 2001 conducted in Tbilisi Didube-Chugureti district (demonstration area).²² Data was collected on the basis of the CINDI health monitoring questionnaire. Study was conducted among 1000 respondents from 100 clusters of 18-64 age-groups. Research results showed that: 6.6% of the respondents have measured blood cholesterol during the last 12 months, 66.4% have never measured it. 22.7% did not know if they have ever measured cholesterol in their blood. 67.6% of the 55-65 age-group and 84.3% of the 45-55 age-group have never measured, or did not know if they have ever measured blood cholesterol level.

Non-communicable diseases risk-factors study in Georgia (2006-2007) provides more precise data.²³ Study design provided for the differential assessment of the cholesterol level, by considering the risk

²² Health Related Behaviour Survey in Georgian Adult Population; 2001

²³ Non-communicable Diseases Risk-Factors Survey; Georgia, 2006-2007; www.ncdc.ge

categories. Such approach allows assessing the hypercholesterolemia control. For determining the target cholesterol level it is necessary to assess the risk category, as the target cholesterol level differs for different risk categories.

Study results showed high prevalence of elevated blood cholesterol level in both sexes. (*See attachment 1, table 25*).

It is important that awareness about hypercholesterolemia was quite low among the respondents. Study also showed unsatisfactory control of hypercholesterolemia among the high-risk individuals. It needs to be noted that the study did not consider the assessment of usage and effectiveness of the diet and n lipids reducing medication therapy.

Analysis of the obtained data showed that:

- 1 87% of respondents have never measured cholesterol level; 7.7% of male respondents and 5.9% of female respondents were aware about hypercholesterolemia;
- 2 72.1% of respondents (70.7% male and 75.5% female) who agreed to measure their cholesterol level have hypercholesterolemia; 81.2% have elevated serum total cholesterol for high risk respondents with ischemic heart disease or diabetes mellitus. These high percentages can be explained that people who agreed to determine their blood cholesterol were somewhat concerned about their health.

Considering the role of hypercholesterolemia in the genesis of atherosclerosis diseases, the very low activity by means of assessing the prevalence and control of this very important risk factor is alarming alongside with preventive measures development.

Blood Glucose

Report from the MoLHSA on the Health Situation of Georgian Population (2005)²⁴: “At the end 2005, 40.1% of the patients with Endocrine, nutritional and metabolic diseases have diabetes mellitus. From 55 080 surveyed patients (prevalence – 1250.0) 285 (prevalence – 31.1) were children. 9 492 (incidence – 217.1) patients were newly registered, including 93 (incidence - 10.1) children. Social importance of diabetes mellitus needs even more attention as 27.6% (15 203 patients) from the total number of surveyed patients are insulin users. Among children were the disease is significantly hard, 248 (87%) patients are insulin users”.

All the official information confirms the tendency of diabetes mellitus prevalence increase.

According the study of health related behavior in Georgian Adult Population (2001)²⁵, diabetes was detected in 2.1% of the surveyed.

Diabetes was detected in 3.9% of the surveyed as result of the study “Health Monitoring Study CINDI – Demonstration Area of Georgia – Chugureti District, Tbilisi” (2004), conducted by the Georgian CINDI Group and the Association of Doctors of Georgia.²⁶

Of high informative value are the data from the non-communicable diseases risk-factors study in Georgia (2006-2007).²⁷

Indicators used in the study allowed identifying both confirmed and alleged hyperglycemia. Hyperglycemia awareness factor was also assessed. (*See attachment 1, table 26*)

Analysis of the obtained data showed that:

- 1 Only 17.8% of respondents have measured their glucose level during the last 12 months.

²⁴ National report on the health status of Georgian population; MoLHSA, 2005

²⁵ Health Related Behaviour Survey in Georgian Adult Population; 2001

²⁶ Health Monitoring Study in the CINDI – Georgian Demonstration Area (Chugureti District, Tbilisi); 2004

²⁷ Non-communicable Diseases Risk-Factors Survey; Georgia, 2006-2007; www.ncdc.ge

- 2 73.8% of survey participants (70.3% male and 75.9% female) who agreed to measure their blood glucose level have normal fasting glucose; 14.2% (16.1% male and 12.9% female) have their fasting glucose impaired and 26.2% (29.7% male and 24.1% female) have provisional diagnoses of diabetes (needs to be confirmed). Again, these high percentages can be explained that people who agreed to determine their glucose level were somewhat concerned about their health.
 - 3 19.7% of male respondents and 17.3% of female respondents were aware about hyperglycemia.
- It is complicated to compare the official statistics and the data from presented studies because of the differences between the evaluation indicators. Presumably the level of hyperglycemia awareness in the population is low.

BMI (Body Mass Index)

According to the World Healthcare Organization, in 2005, 49% of Georgian males and 55% of females were overweight. Presumably in 2015 59% of males and 64% of females will be overweight.

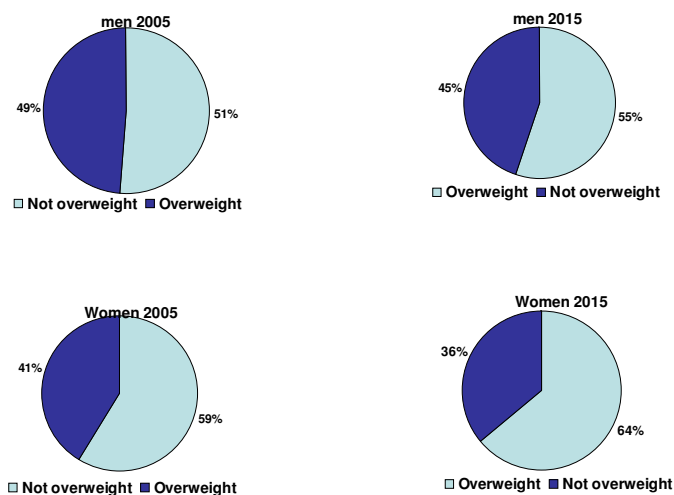


Figure 34 Projected prevalence of overweight, Georgia, males and females aged 30 years or more, 2005 & 2015

Interesting information is given by the study conducted by the WHO, MoLHSA, NCDC, CINDI Georgia and Association of Doctors of Georgia, in the demonstration area (Tbilisi Chugureti District; 2001, 2004, 2006-2007).

According the study of health related behavior in Georgian Adult Population (2001)²⁸: average weight of the surveyed was 71.2 kg and average BMI – 24.6. BMI figures by age groups were: 21.3 in 18-25 age-groups; 26.8 in 55-65 age-groups. 61.1% of respondents believed that they had normal weight (majority were men). 31.6% of the respondents said they were overweight (majority were women).

According to the “Health Monitoring Study CINDI – Georgian Demonstration Area – Chugureti

²⁸ Health Related Behaviour Survey in Georgian Adult Population; 2001

District, Tbilisi” (2004)²⁹: average weight of the surveyed was 73.6 kg and average BMI was 26.2. BMI indicators by age groups were: 24.4 in 25-34 age group; 26.5 in 55-65 age group. 55.3% of the respondents believed they had normal weight (majority were men) and 35.2% of the respondents believed they were overweight (majority were women).

In contrast to the above mentioned studies the information from the “non-communicable diseases risk-factors study in Georgia” were based not on the survey, but on the anthropometric results. This means the validity of the given research is much higher.³⁰ (See attachment 1, table 27)

According to the research:

- 1 The mean height in the study population was 170.6 cm (with a maximum of 200 cm and a minimum of 145 cm). Male were 13 cm taller than female (177.3 cm and 164.3 cm respectively).
- 2 The mean body weight of the whole study sample was 80.4 Kg (with a maximum of 163 Kg and a minimum of 41 Kg). Similarly, male had higher figures in body weight than female (86.9 kg Vs 74.3 Kg respectively). In males the body weight peaked at the age group of 45-54 years, but in females at the age group 55-65.
- 3 The mean BMI of the whole sample as well as for male and female was 27.6.
- 4 Only 34.0% of surveyed persons had normal weight (BMI=18.5-24.9). 34.9% of respondents were overweight (BMI=25-29.9). The rate of overweight among male was higher than female (40.2% Vs 34.9%). Nearly one third of the respondents were obese (29.4%). Obesity was higher among female (31.6% Vs 27.1%). 1.7% (0.8% male and 2.6% female) of respondents were thin (BMI<18.5) and 2.6% (1.4% male and 3.7% female) were categorized as obese grade 3.
- 5 Waist circumference measurements for female exceeded the optimal data (90.2 cm), whereas the measurements for male were within the acceptable standard (99.3 cm). Results showed that the waist circumference measurements for 38.8% of male and 54.4% of female exceeded the optimal data.
- 6 The mean waist to hip ratio for male was within the standard measurement (0.94), but for female it exceeded the optimal data (0.83).

According to the available information, overweight problem is quite prevalent, mostly among females. According to the *European Health Report (2005)*, in Georgia **high BMI** is at the third place in the ranking of general mortality risk-factors in Georgia.

All the above mentioned indicates the importance of preventive measures activation.

Tobacco

One of the best studied risk-factors of the development of cardiovascular diseases is the nicotine affect on human body.

Tobacco abuse causes increased losses in the society from year to year. It has been determined that expenses on purchasing cigarettes equal the cost of diagnosis, treatment and rehabilitation of smokers. Different studies have shown that majority of Georgian population is under permanent and intensive affect of tobacco. Tobacco usage frequency is the highest at 26-59 age-groups both among males and females. They smoke 60.5% of the total consumed cigarettes.³¹

Approximately 40% of the adult population smokes. 50-60% of males are smokers and the smoking progress among females is alarming. It increased almost 6 times during last 16 years (including pregnant women) and achieved 22%. The situation is also alarming among children and adolescents,

²⁹ Health Monitoring Study in the CINDI – Georgian Demonstration Area (Chugureti District, Tbilisi); 2004

³⁰ Non-communicable Diseases Risk-Factors Survey; Georgia, 2006-2007; www.ncdc.ge

³¹ National Report; MoLHSA, 2003

mainly 14-16 year-old children.

According to the Nationwide study³² 42% of the school students have tried tobacco (5.2% of them have tried tobacco before the age of 10); 23.3% regularly smoked during the survey period and 93.3% of them regularly were among the smokers.³³

Approximately 27-39% of adult population smokes. Among males 50-65% is smokers.

Anna Gillmore³⁴ and other authors have conducted studies in eight countries of the former Soviet Union. Surveys were conducted among the representative groups of the age less than 18. It has been determined that in these countries tobacco consumption is higher than it was in the USA during the tobacco epidemic (During that period in Georgia smoked 55% of the population; 62.3% of males and 5.8% of females).

According to the non-communicable diseases risk-factors survey³⁵:

- 52.3% of respondents have smoked daily at least 1 year in a lifetime. Positive reply to this question was more frequent among males (77.9% vs. 27.8%).
- Results showed that the mean years of smoking among ever daily smokers were 19 years. Male reported longer duration than female (21 yrs Vs 15 yrs).
- Nearly three fifth of the ever smokers (60.1%) smoked 20 cigarettes or more per day, that could be categorized as heavy smokers. Heavy smoking was evident mainly among male. Mean number of cigarettes per day was 19 (21-among males and 13-among females).
- The prevalence of current smoking was 42.2% (40.7% are daily smokers and 1.5% occasionally smokers).
- The proportion of smoking among male was nearly three times higher than female (62% Vs 23% respectively). Regarding age specific smoking rate, it is noticed that smoking is less prevalent among old aged years (≥ 55) males and females.
- Nearly all of current daily smokers used manufactured cigarettes (99.8%). Only 2 man smoked daily pipes and none of the respondents smokes self-rolled cigarettes.
- Only 28.4% of daily smokers were advised to stop smoking by their physician during the last 12 months.
- 75.6% of ever daily smokers are very concerned about harmful consequences that smoking can have on their health (mostly females – 85.4% Vs 71.9% respectively); 14.8% are somewhat concerned; 6.5% are not much concerned and 1.0% is not at all concerned.
- It is alarming that 21.3% of ever daily smokers do not wish to stop smoking and 24.0% are not sure; just 33.8% would like to stop smoking.
- 39.1% of ever daily smokers have never tried to stop smoking and these are mostly man (40.3% vs. 36.0%). 4.9% have tried to stop smoking during the last month; 8.5% 1-6 months ago; 11.1% 6-12 months ago; 35.8% more than a year ago.
- Among respondents who used to smoke 21.9% (22.2% male and 20.8% female) quitted smoking.

All the above mentioned proves the increasing tendency of smoking prevalence in the Georgian population; the most alarming is the statistics for women and adolescents. Comparison of data is complicated due to the non-unification of studies and databases. It is necessary to conduct vigorous interventions for correcting the situation in the shortest possible period.

³² Nationwide survey

³³ National Report; MoLHSA, 2004

³⁴ Anna Gilmore et al; *Prevalence of Smoking in 8 Countries of the Former Soviet Union: Results From the Living Conditions, Lifestyles and Health Study*; December 2004, Vol 94, No. 12 | American Journal of Public Health 2177-2187

³⁵ Non-communicable Diseases Risk-Factors Survey; Georgia, 2006-2007; www.ncdc.ge

Alcohol

According to the WHO, approximately 9% of the morbidity burden in European region comes on consumption of alcoholic beverages, which along with other risk-factors promotes development of such diseases as: cirrhoses, hypertension, stroke, ischemic heart diseases and etc. Historic traditions of limited consumption of wine and other alcoholic beverages in Georgia promoted keeping of low level of alcoholism till 1990's.

The situation was complicated during later years because of the political and economic problems in the country, selling of alcoholic beverages by dumping prices, which also accompanied by the insufficient production of high-quality wines at the internal market.

In 2004, 8033 cases of alcoholism were registered in Georgia, 198 of those were newly detected. The figure has increased compared to 2003 when the number of alcoholism cases was 7960, new cases - 174.³⁶

According to the non-communicable diseases risk-factors survey³⁷:

- During previous 7 days respondents consumed 0.6 glasses of strong spirits, 1.5 glasses of wine and 0.8 bottles of beer, in average. Alcohol consumption was much higher among male population.
- 36.7% of respondents have never had strong spirits and majority of them are women. 36.9% drink strong spirits a few times a year; 19.2% 2-3 times a month (mostly men); 3.8% once a week, 2.3% 2-3 times a week and 0.6% drink strong spirits daily (in this group are only males).
- 20.2% (mostly women) have never had wine. 44.7% drink wine a few times a year, and there are relatively more women in this group. 24.4% drink wine 2-3 times a month; 5.6% weekly and 3.2% 2-3 times a week. 1.1% (26 respondents) drink wine daily and there are only 1 female in this group.
- 34.7% have never had beer and their absolute majority are women. Respondents drink beer mostly a few times a year – 29.7%; 17.6% drink beer 2-3 times a month; 7.0% weekly and 5.4% 2-3 times a week. 2.6% drink beer daily. Among those who drink beer frequently, majority are males.
- 55.8% have never had 6 or more glasses at once. There are significantly more females in this group than males. 1.1% (28 respondents) consumes this amount of alcohol daily or almost daily. There are only one female in this last group.

All the above mentioned means that the data on alcohol consumption in Georgia during last few years is insufficient; comparison of the data from different studies is complicated due to the differences in indicators.

Nutrition

Nutrition characteristics significantly affect the health. Both over dosage or shortage of certain components in diet may result in worsening of health condition. Coincidentally, sufficient and healthy nutrition is one of the main strategies of different chronic diseases prevention.

In Georgia, official statistics of food consumption is mainly based on the food product balance reports and not on the researches on food product consumption, which naturally does not give complete information from medical point of view.

It is noteworthy that in 2005 in population diet 31.5% came on macaroni products, bread; 28.7% came on vegetables, 17.3% came on milk and dairy products and the share of meat was only 3.4%.

For today there are the results of the study done by the Department of Statistics of the Ministry of

³⁶ National Report; MoLHSA, 2004

³⁷ Non-communicable Diseases Risk-Factors Survey; Georgia, 2006-2007; www.ncdc.ge

Economic Development (DSMED, 2006)³⁸, according to which the median “calorie consumption” of person (kilocalories /day) was 2670 kilocalories in 2005, which is almost 300 kilocalories more compared to 2002 (2360 calories). It is noteworthy that “calorie consumption” in 2005 was almost the same less (300 kilocalories) compared to the figure of 1983.

According to the same study the share of nutrients in food energy consumption was the following: fat - 21%; proteins – 12%; the carbohydrates - 68%. All these figures are within the WHO recommended limits.

Deficit of information on the population food consumption is partially compensated by the 2001 Health Monitoring Study (pilot) conducted by the CINDI in Tbilisi and by the 2004 Tbilisi Didube-Chugureti District (demonstration area) Health Related Behavior Study³⁹; also by the non-communicable diseases risk-factors survey⁴⁰. According to the latter study:

- The majority of the respondents used vegetable oil (92.4%). Only 3.2% used butter or product consisting mainly of butter. Small percentage of the respondents used margarine (0.7%) and lard or other animal fat (0.2%).
- 78.1% of respondents (82% male and 74.3% female) eat breakfast, percentages increase with age.
- 65.3% of surveyed prepare food at home daily.
- 62.4% of respondents do not drink milk, 23.99% drink whole milk.
- 56% of surveyed never add salt to their meals; 31.6% when food isn't salty enough, but 11.7% add salt before testing. 85.6% usually use iodized salt.
- The majority of respondents frequently consume potato and cheese. 39.52% never used rice/macaroni during the last week and 45.8% use 1-2 times. 51.25% never consumed cereals and 32.2% use them just 1-2 times a week.
- About 40% of questioned have not consumed chicken and more than a half have eaten just once during last 7 days; majority have never or just 1-2 times a week consumed fish; regarding meat and meat products – 22.78% & 43% never, 49.6% & 38.7% - 1-2 times a week respectively; 27.6% haven't eaten eggs, more than half of surveyed have consumed 1-2 times a week.
- Only 31.5% of respondents eat fresh vegetables almost everyday and nearly 10% never consumed during the last week.
- 37.46% of surveyed never and 36.6% just 1-2 times a week eats fruit; almost 80% never consumed fruit as compote or in different technique.
- 34.9% ate sweet pastries and 27.2% ate candies/chocolates 3-5 times during the last week, about one third of respondents consumed different kinds of sweets - 1-2 times a week; 22.3% never consumed sweet pastries and 32.9% never ate candies/chocolates during last 7 days.
- 31.23% of respondents have never drunk, 36.5% - 1-2 times and 23.1% - 3-5 times have consumed soft drinks.

The above-described figures are not enough for working out the national guideline principles for the management of non-communicable diseases. For this, first of all it is necessary to assess the consumption of such food products as:

- 1 In total fats: saturated and trans fats; monounsaturated and polyunsaturated fats; cholesterol.
- 2 In total carbohydrates: free sugars; fibers; polysaccharides
- 3 NaCL

Only after determining the share of the above listed food ingredients in the population diet it will be possible to develop the recommendations coinciding with the nutrition characteristics and culture of our population.

³⁸ Household Survey on Health Service Utilization and Expenditure (HUES), 2007

³⁹ Health Monitoring Study in the CINDI – Georgian Demonstration Area (Chugureti District, Tbilisi); 2004

⁴⁰ Non-communicable Diseases Risk-Factors Survey; Georgia, 2006-2007; www.ncdc.ge

Physical Activity

There is no official statistical data on the physical activity in our country.

In 2001 (CINDI Georgia)⁴¹ 42.9% of the respondents do not walk to work, because they do not work, or work at home; 6.4% drive to work; 13.6% spend 15 minutes on walking to work and 22% spend 15-30 minutes on that.

70.8% of the respondents do physical exercises for 30, or more minutes on several times a year; 6.1% exercise every day, mostly males; 5.9% do not exercise due to health conditions and 0.9% do not exercise because they are not able to.

Work of the 28.3% of the respondents is physically easy, mainly in sitting position. Work of the 48.4% of the respondents does not need walking. Work of the 20.5% of the respondents requires medium physical activity and of 2.7% - hard work by hand. 9.9% of the respondents were advised by family members to increase physical activity during last 12 months; 2.3% of the respondents were advised so by doctors. According to the figures of 2004⁴² the average number of days when the respondents had heavy or medium physical activity was 0.72-0.79 and the average duration of this activity was 29-35 minutes during those days. Time when the respondents had to be seated during working days was 10.6 hours/day. 43.2% of the respondents did not work, or worked at home, 7.1% drove to work, 12.3% spent 15 minutes on walking to work and 17.9% spend 15-30 minutes on walking to work.

56.4% of the respondents exercised physically during 30, or more minutes only several times a year; 6.1% exercised daily; 8.6% did not exercise because of illness and 1.3% did not exercise because they were not able to. Work of the 32.4% of the respondents was physically very easy (mainly in seated position), 45.4% worked mainly at walking job, 17.8% at medium physical activity jobs and 3.8% had to work heavily by hands.

27% of the respondents were advised by family members to increase physical activity during last 12 months; 25% of the respondents were advised so by doctors.

Physical activity was assessed in framework of the non-communicable diseases risk-factors survey (2006-2007)⁴³.

Survey results:

- 92.6% of respondents have possibilities to exercise (93.1% of males and 92.1% of females);
- 93.9% of survey participants (91% male and 96.7% female) haven't practiced physical activities during the last 7 days;
- 55.1 % of respondents (59.1% male and 50.5% female) haven't done any moderate physical activities;
- 8.5% of surveyed haven't practiced any moderate physical activities, but 60.7% exercised moderately 6-7 days a week;
- 66.7% have spent more than an hour doing low-intensity physical activities.
- 43.5% of respondents (49.1% male and 38.2% female) have spent sitting more than 6 hours daily.
- 85.6% of surveyed do any of leisure time physical activity (at least 30 min.) leading to shortness of breath or perspiration only a few times a year or less frequently.
- 25.8% of males and 26.2% of females have very easy work (mainly seated); 17.2% of males and 20.4% of females have easy (mainly walking) type of work, 10% of males and 5.2% of females have medium (lifting and moving of light loads) type work and 3% of males and 0.6% of females have heavy (heavy load moving) type of work;
- 43.5% (49.1% of males and 38.2% of females) spend more then 6 hours in seated position;

⁴¹ CINDI Georgia, Health Monitoring Study in Tbilisi, 2001

⁴² Health Related Behaviour Survey in Georgian Adult Population; 2004

⁴³ Non-communicable Diseases Risk-Factors Survey; Georgia, 2006-2007; www.ncdc.ge

Data on population's physical activity is not enough. Based on that data population's physical activity is quite far from ideal. So called "seated" lifestyle is prevalent in Georgian population, the majority lives so. It appears that the awareness of physical inactivity is also low. For healthy lifestyle promoting it's be necessary to implement comprehensive preventive measures (including educational), which will be aimed at increasing physical activity of the population.

Psycho-Social Factors

Ongoing political and economic events in Georgia during last 15 years caused the high prevalence of nevrotization and stress disorders symptoms in the population. Attention should be paid to the so called specific risk populations, especially the internally displaced persons and persons living in conflict zones. Pilot studies conducted among the persons living in conflict zones during last 10 years have identified the tendencies of increase of social self-isolation and somatic pathology.⁴⁴

Results of the given study showed that 44.8% of the surveyed IDP patients at the Psycho neurology Clinic had depressive syndrome.

In 200-2001, the anonymous study of reasons of drug-addiction among adolescents (Tbilisi, Imereti, Samegrelo) showed that 62-67% of them tried drugs being depressed⁴⁵.

Experts believe that 20% of the patients admit to doctors because of being depressed.

Wide range of emotional reactions to psycho-stress situations including depression, anxiety, change of attitudes to own health and nervousness, causes the certain inadequate attitude to chronic diseases.⁴⁶

As for social isolation, insufficient social support, and low level of social-economic status - they are considered as factors associated with the inadequate control of chronic diseases.

Georgian hypertension Society has implemented several projects for the IDP population:

In 2003: Western Georgia Community Mobilization Initiative (Care-supported) – educational project for Tskaltubo Region IDP's⁴⁷. Death causes have been studied on the basis of medical documentation. In the death medical certificates two main causes prevailed: stroke and accidents (meaning suicides, the statistics of which are unfortunately unavailable).

2004: Eastern Georgia Community Mobilization Initiative (Mercy Corps-supported) – educational project for Akhlagori population⁴⁸. Pilot study surveyed arterial hypertension and its risk-factors in the conflict zone. Study results showed that arterial hypertension prevalence was 73.5% (opportunistic screening) and of psycho-emotional stresses – 78.2%.

In 2006, during the humanitarian action conducted by the PSP group in Shida Kartli, it was possible to examine conflict zone village of Kurta population – 80% of population needed anti-hypertension treatment.

In 2007 hypertension and psycho-social factors screening among IDP's (Gldani District organized families)⁴⁹ was conducted by support from the Georgian pharmaceutical company GMP. 49.8% of respondents suffered from arterial hypertension, 55.8% of those also had symptoms of depression, 41.7% - anxiety and 28.6% - clinical forms of depression (Hospital Anxiety and Depression Scale HADS).

⁴⁴ Dali Khorava; *Spread of Depression in Abkhazian IDPs, Treatment with "Ludbeck" psychotropic medication*; 2007

⁴⁵ Drug-Addiction Reasons survey among Adolescents; 2000-2001

⁴⁶ Bejhan Tsinamdzgvishvili; *Psychosocial Factors and Anti-Hypertension Treatment Agreement Problem*; 2007

⁴⁷ Western Georgia Community Mobilization Initiative; Care, 2003

⁴⁸ Eastern Georgia Community Mobilization Initiative; Mercy Corp, 2004

⁴⁹ Screening of Arterial Pressure and Psycho-social Factor in IDP Population, 2007

Section B: The context of the NCD burden

Demographic Statistics

According to the data provided by the Department of Statistics of the Ministry of Economic Development of Georgia⁵⁰ mid year population in 2007 was 4388400 – 52.6% females, 47.4% males. 52.5% of the population lives in urban areas and 47.5% in rural areas of the country.

Georgia is becoming older; Shape is more similar to European countries. Population is more even distributed on of the population across age groups. Children (0-14 years of age) made up 21% of the population. The population of labor force age (15-64 years of age) made up 67.9% of the total. The elderly (65 years of age and older) made up 14.6% of the population.

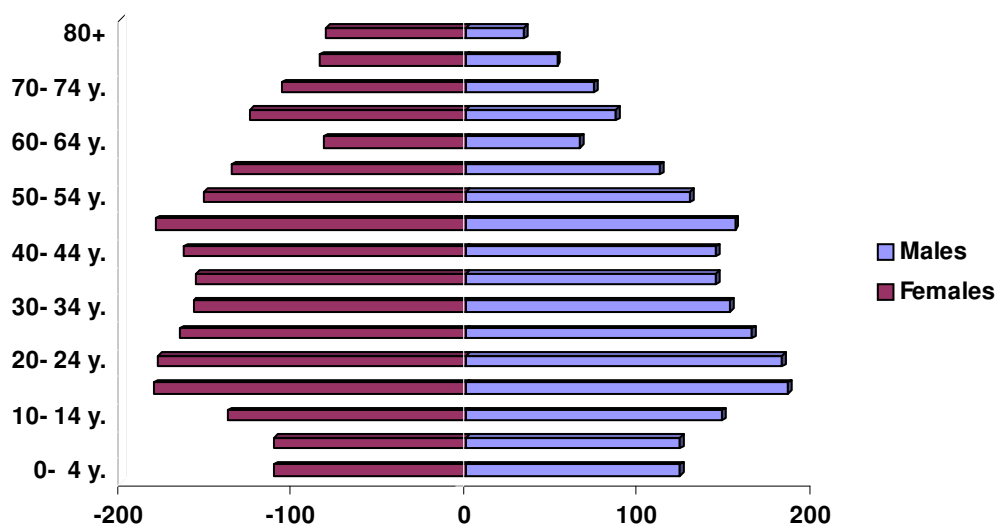


Figure 35 Age pyramid, Georgia, 2007

In 2007, the Department of Statistics of the Ministry of Economic Development of Georgia had registered 49 287 (52.5% boys, 47.5% girls) live births.

From 1989 through 2005 live births rate decreased from 16.8 to 10.7, consequently the natural increase rate reduced from 7.7 to 0.8 per 1,000 population. In 2006, live births rate had become 10.9 and population growth rate had become 1.3. In 2007, both rates had increased (11.2 and 1.8 accordingly).

Total fertility rate in Georgia is much under the normal reproduction level and equal 1.45 child per woman.

According to the data provided by the Department of Statistics infant mortality rate per 1000 live births had been almost stable during the time period from 1970 to 2004 and were 23.6 on average. 2005-2007 years were mentioned as decreasing tendency years, so in 2007 infant mortality rate had recorded as 13.3. For comparison: according to the data provided by the MoLHSA infant mortality rate was 14.1.

Maternal mortality rate in Georgia was one of the highest among the European region during the period of 1997-2004. In 2005 maternal mortality rate decreased almost twice and became 23.4 per 100 000 live births. The tendency hold out in 2006- 2007 (the rates were 23.0 and 20.2 accordingly).

According to the data provided by the Department of Statistics in 2007, number of stillbirths was 632 (rate per 1000 births was 12.7). According to the data provided by the MoLHSA number of stillbirths in maternity houses was 738 (rate per 1,000 births was 14.7).

⁵⁰ www.statistics.ge

In 60-70s Georgia had the lowest mortality rate distinguishing from other Soviet Republics. In Georgia from 1992 through 2004 mortality rate increased each year and the mortality rate set a maximum at 11,3 in 2004. In mentioned year DFID program had place in Georgia. According to this program, in addition to the traditional civil acts of death from the Civil Registry Agencies, Department of Statistics had received from the medical facilities and processed Medical Birth-Certificates and Medical Certificates of Death. In 2004 had recorded 48 793 cases of death. The number of deaths was accounted as 40 721 in 2005 and as 42 255 in 2006 (total mortality rate was 9.6) after this program had completed. In 2007, 41178 deaths had recorded and mortality rate had decreased to 9.4.

Declines in demographic indicators, including a sharp decline in fertility, have left Georgia with a negative replacement ratio and a process of depopulation.

It should be mentioned that in different age groups mortality rate in males is greater than in females and has a quick increase tendency. Mortality rate is 10.6 in males and 8.3 in females.

In 2007, all death cases had distributed by the main causes in the following way: Diseases of the circulatory system accounted for 66.9 percent; Neoplasms accounted for 10.9 percent; Injury, poisoning and certain other consequences of external causes – for 3.2 percent; and Symptoms, signs and abnormal clinical and laboratory findings – for 8.4 percent.

In 2007, life expectancy at birth in Georgia was less than in Europe region. According to the data provided by the Department of Statistics the figure was 75.1 (70.5 for men and 79.4 for women).

(See attachment 1, table 28, 29, 30, 31, 32).

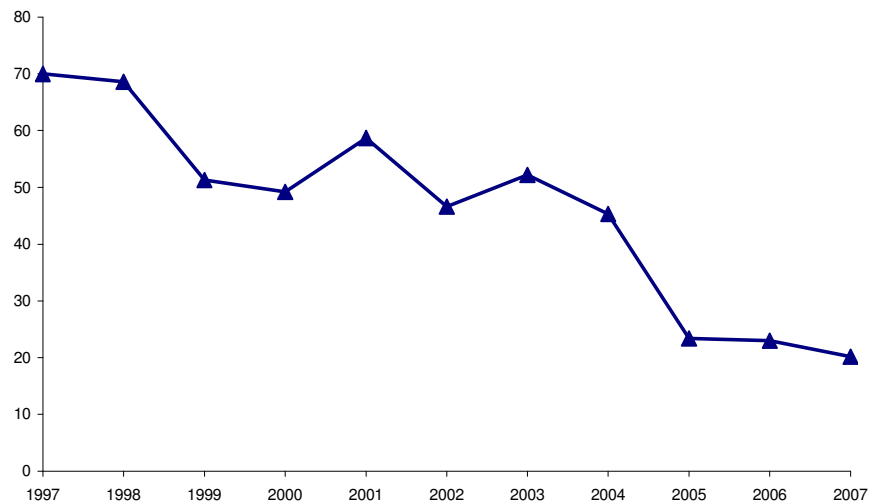


Figure 36 Maternal mortality ratio per 100000 live births, Georgia 2000-2007

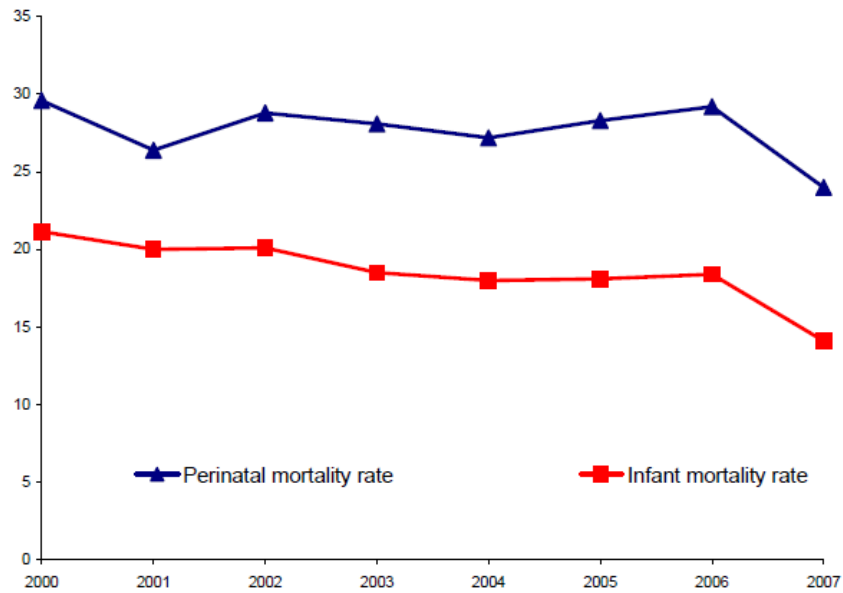


Figure 37 Perinatal and infant mortality rates, Georgia, 2000-2007

State Budget

Georgia has encountered many political and socioeconomic difficulties during its transition to a market economy, including problems related to or stemming from privatization, foreign trade, the informal economy and corruption, tight monetary policy, aging of the population, and migration; Georgia is plagued with a poorly organized labor market, high unemployment levels, low income levels, and a training system that remains rigidly organized and does not meet the needs of Georgia's new economy. The new Georgian authorities have inherited from the previous government a marked decline in socio-economic development. Therefore, very first steps were made to stabilize the system and allow maximally possible social goods to be produced. The government previously constrained by centralization, ineffective national governance, and rampant corruption now embarks on an ambitious program of reform, initiating efforts of enhanced civic participation, transparency, and the establishment of peace and security within its borders.

The new government has achieved remarkable improvements in Georgia's economy. Government reforms have resulted in reducing barriers to doing business, a new customs code, land privatization, and increased business registration. However, these reforms are just the first steps in building a stable economy, and much remains to be done to fully implement the government's reform agenda.

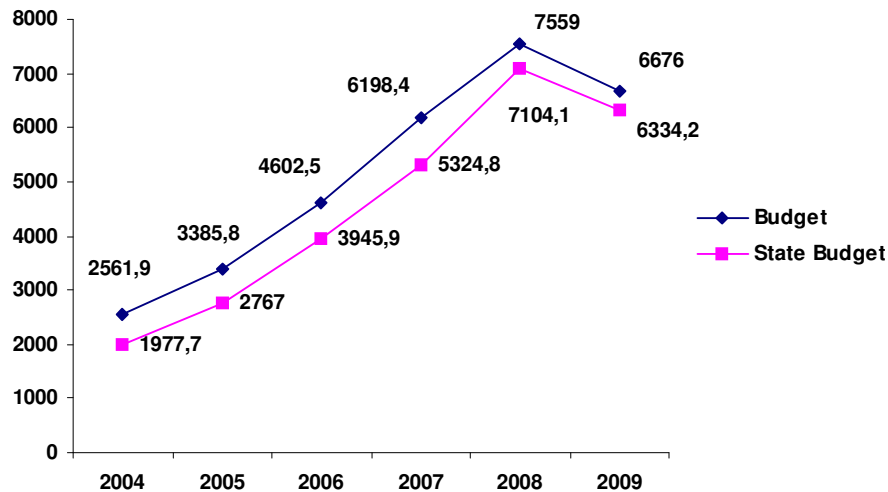


Figure 38 Budget in absolute numbers, Georgia, 2004-2009

While most macroeconomic indicators are positive, significant challenges remain. Georgia's trade deficit increased from 25 percent of GDP in 2005 to 36 percent of GDP in 2006. Inflation increased from 6.2 percent in 2005 to 11 percent in 2007 and declined to 5.5% in 2008. Approximately 40 percent of the people live below the poverty line, and many people survive on subsistence agriculture. Major sectors of employment such as agriculture are not ready to compete in export markets. It is difficult for businesses to get medium and long-term business loans, and low entrepreneurial business skills further limit business growth.

Georgia's overall ranking improved from 112 to 37 in the World Bank's Doing Business in 2007 Survey, and it was named the Number One Reformer in the world. Georgia's ranking on Heritage Foundation's Economic Freedom Index 2007 improved from 52 to 35.^{51 52}

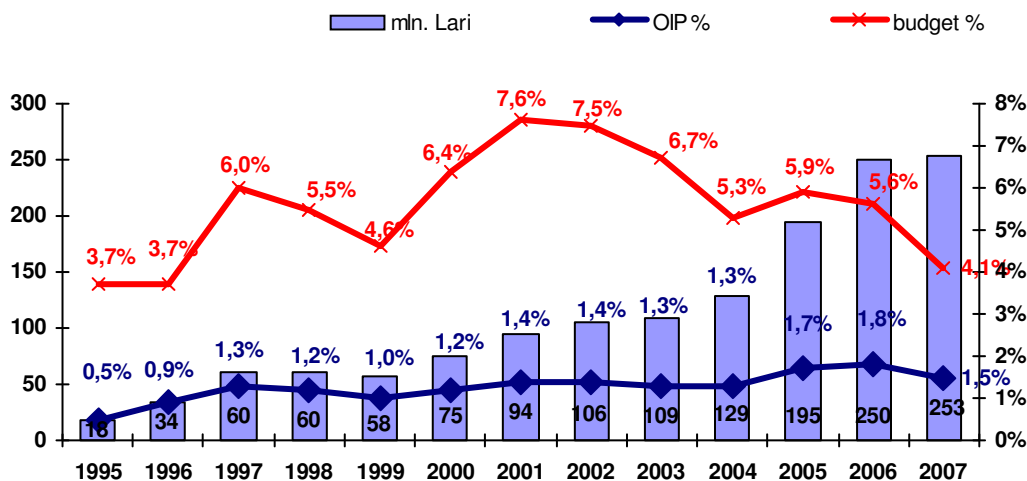


Figure 39 State Expenditures on Healthcare

While overcoming the post-Soviet economic collapse and subsequent lack of resources, the health care system in Georgia is characterized by an imbalance between demand and supply, with large numbers of

⁵¹ Ministry of Finance of Georgia, www.mof.gov.ge

⁵² Amiran Gamkrelidze, Healthcare System in Georgia; Course of lectures for healthcare managers

clients unable to access health services. An uneven geographical distribution of health facilities makes access to health care particularly difficult in rural areas. In many cases, the services patients would seek are not available: facilities, equipment, and supplies are lacking, and health care providers' skills need updating.

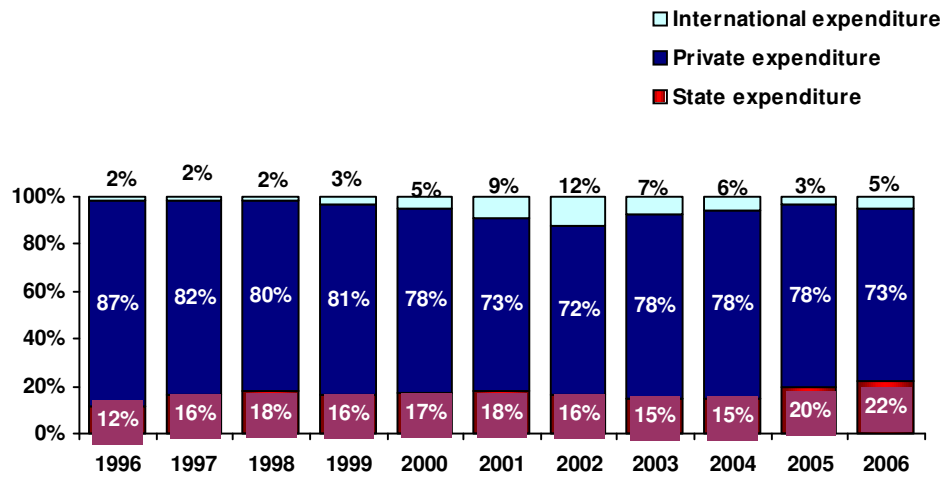


Figure 40 Structure of Healthcare Expenditures, Georgia, 1996-2006

The health system continues to rely mainly on out-of-pocket payments, and public financing for the sector contributes only a marginal share. Therefore, financial access barriers still remain within the system and limit access, mainly by the poor, to needed services. Health care costs are a significant burden on household budgets, and a hospitalization could easily push even well-off households into transitional poverty. Moreover, for the poor layer of society, even appropriate outpatient care poses a significant financial burden. Thus, overall, health care financing reforms failed to secure adequate financial risk protection against illness for households in Georgia, both poor and well-off alike.

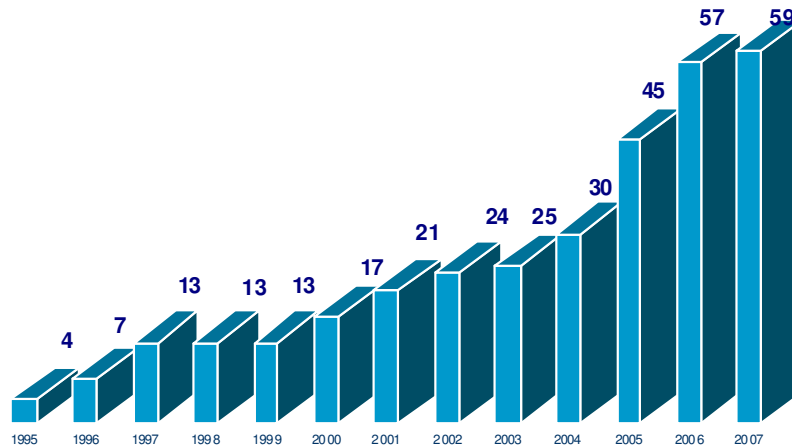


Figure 41 State Expenditures on Healthcare per Citizen in Georgia, 1995-2007

Low priority is given to the health sector within the new government. Planned allocations for health from the state budget declined even below 2003 levels and reached only 5.9 percent of total planned government expenditures in 2005, which is less than both the 2003 and 2004 budget allocations. But due to its improved ability to collect tax and other revenues, the government increased the health budget by more than 20% for 2006 but decreased to 4.1% in 2007.

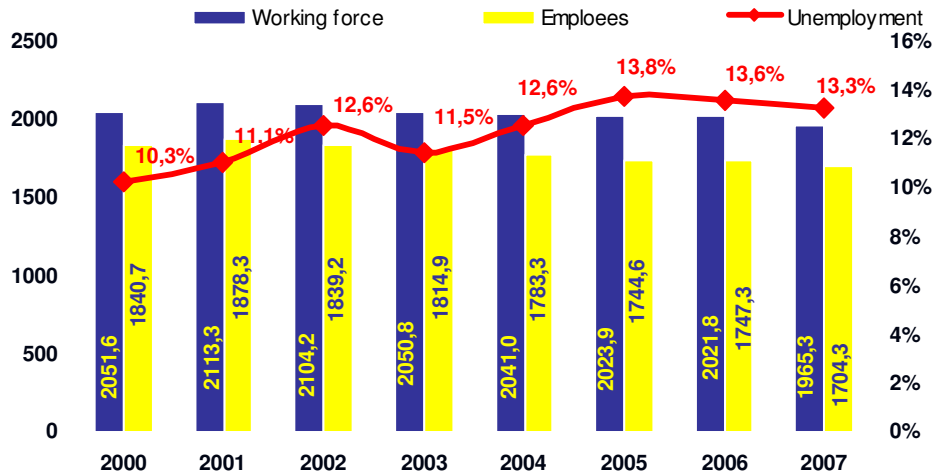


Figure 42 Division of population by status of employment

Unemployment rate as well as employment rate is more or less stable last years (2005-2007).

Section C: Determining the economic burden of NCD

According to the Healthcare Policy Department of the Healthcare Department of the Ministry of Labor, Healthcare and Social Protection of Georgia, the state expenditures on non-communicable diseases in 2007 was 30%.

State Programs - 2008

State program for detection and treatment of cancer diseases

The program provides for detection and treatment of cancer diseases, hospital treatment of neuro-onco diseases, treatment of onco-hematology adult patients and hospices.

Program budget is 5 920 000 GEL.

State program for hospital care for diabetes patients

The program is aimed at improving health condition of diabetes patients by improving affordability, choosing of adequate dosage of medication for effective treatment of patients by means of in-patient examination.

Program budget is 280 000 GEL.

Budget of the program – **Provision of medication to adult patients with type 1 diabetes** – is 3 392 000 GEL.

Section D: Current policy responses to NCD

Normative documents providing for working out of the mechanisms for control and management of non-communicable diseases⁵³

Georgian Laws

1. On Healthcare;
2. On Public Health;
3. On Medical Activities;
4. On Patients Rights;
5. On Psychiatric Aid;
6. On Medical Insurance;
7. On Prevention of Iodine and other Microelements & Vitamins Deficiency;
8. On Tobacco Control in Georgia;
9. On Narcotics, Psychotropic Substances, Precursors and Narcology Care;
10. On Medical-Social Expertise;
11. On Human Organ Transplanting;
12. On Protection and Promotion of Natural Feeding of Children;
13. On Blood Donors.

Normative Decrees

1. Order #111/n of the MoLHSA of Georgia on “Approval of 2008 Healthcare Programs”, dated May 6, 2006.
2. Order #150/n of the MoLHSA of Georgia on “the approval of legal turnover of narcotics, psychotropic substances and precursors in pharmaceutical, medical, educational, scientific-research, expert-diagnostic establishments”, dated July 21, 2003.
3. Order #157/n of the MoLHSA of Georgia on “provision of palliative care for patients with chronic incurable diseases”, dated October 7, 2008.
4. Order #142/n of the MoLHSA of Georgia on “regulations for conducting of forensic-psychiatric expertise”, dated June 19, 2008.
5. Order #140/n of the MoLHSA of Georgia on “the approval of 2008 disease prevention state program”, dated June 17, 2008.
6. Order #294/n of the MoLHSA of Georgia on “determining medical warnings on tobacco product packs”, dated November 3, 2006.
7. Order # 147/n of the MoLHSA of Georgia on “environmental and occupational health”, dated March 5, 2007.
8. Order #112/n of the MoLHSA of Georgia on “psycho-social rehabilitation standard approval”, dated February 4, 2007.
9. Order #91/n of the MoLHSA of Georgia on “registration, removal from registration and control of the psychiatric disorder patients in psychiatric hospitals”, dated March 20, 2007.
10. Order #173/n of the MoLHSA of Georgia on “right of employment in medical establishments and approval of list of medical personnel with coinciding education”, dated July 26, 2004.
11. Order #94/n of the MoLHSA of Georgia on “the creation of the National Council for working out,

⁵³ www.moh.gov.ge

- assessing and implementing the clinical practice national guidelines and disease management state protocols”, dated March 27, 2006.
12. Order #101/n of the MoLHSA of Georgia on “the organizing and provision of medical statistical data”, dated May 4, 2005.
 13. Order #276/n of the MoLHSA of Georgia on “approval of the list of rare diseases”, dated May 14, 2001.
 14. Order #72/n of the MoLHSA of Georgia on “approval of the list of acute and incurable diseases, which act as basis for freeing from imprisonment”, dated March 27, 2003.
 15. Order #35/n of the MoLHSA of Georgia on “the founding of the primary healthcare coordinating council and approval of its statute”, dated February 24, 2003.
 16. Order #198/n of the Minister of Labor, Healthcare and Social Protection of Georgia on “the rules of archiving of medical data in medical establishments”, dated July ???, 2002.
 17. Order #298/n of the Minister of Labor, Healthcare and Social Protection of Georgia on “the organizing, launching and approval of sanitary regulations for hospitals, maternity houses and other medical establishments”, dated August 16, 2001.
 18. Order #299/n of the Minister of Labor, Healthcare and Social Protection of Georgia on “the approval of sanitary-hygienic and epidemiological requirements to transfusiology establishments”, dated August 16, 2001.
 19. Order # 300/n of the Minister of Labor, Healthcare and Social Protection of Georgia on “approval of regulations for collecting, storing and dumping of medical wastes of treatment-preventive establishments”, dated August 16, 2001.
 20. Order # 310/n of the MoLHSA of Georgia on “approval of allowable limits for toxic substances, nicotine and oil in tobacco products and its smoke”, dated August 16, 2001.
 21. Order #264/n of the MoLHSA of Georgia on “the approval of classification of vibration diseases and pneumoconiosis”, dated September 18, 2002.
 22. Order #258/n of the MoLHSA of Georgia on “the approval of dietary guidelines”, dated September 17, 2002.
 23. Order # 263/n of the MoLHSA of Georgia on “the approval of procedural rules on prevention of occupational diseases”, dated September 18, 2002.
 24. Order #41/n of the MoLHSA of Georgia on “the approval of x-ray-radiology diagnosis procedures and insuring of radiation safety”, dated March 4, 2003.
 25. Order #111/n of the MoLHSA of Georgia on “the approval of food and energy requirements for minimum food basket”, dated May 8, 2003.
 26. Order #233/n of the MoLHSA of Georgia on “the approval of sanitary regulations for organization, equipment and operation of different level outpatient institutions”, dated October 6, 2003.
 27. Order #282/n of the MoLHSA of Georgia on “the approval of sanitary regulations for organizing and operation of pharmacies”, dated November 12, 2003.
 28. Order #10/n of the MoLHSA of Georgia on “the approval of sanitary norms and regulations for organizing radioisotopes laboratories and usage of open nuclear medications”, dated January 15, 2004.
 29. Order # 216/n of the MoLHSA of Georgia on “the approval of the list of occupational diseases and of their risk”, dated July 13, 2007.
 30. Order #300/n of the MoLHSA of Georgia on “approval of the technical regulations of food fortification”, dated October 19, 2007.

Section E: Current capacity

Existing potential for prevention and control of non-communicable diseases in Georgia

Health information systems

As set by the global strategic plan, it is recommended to strengthen surveillance systems and to collect standard data on risk factors, disease's incidence and death's causes using the World Health Organization instruments.

Health information systems available in the country now include the data sources based on population and healthcare facilities. Total registration of the population is being conducted; there is the birth/death registration system, public health control system. The main responsible body for statistics is the State Department of Statistics⁵⁴, which coordinates the statistical activities within the country, including the collection of figures from the healthcare sphere.

The National Center for Disease Control and Public Health⁵⁵ is the main responsible body for the collection of health statistics. The given data is published in the annual statistical yearbook.

Health information systems comprise only infectious diseases surveillance data, as for the non-communicable diseases there is no surveillance. Information on risk factors is not being collected and representative randomized studies of health related behaviors are very rare.

The information system of the country is part of the healthcare reporting system. National healthcare reports are published annually.⁵⁶

Certain surveillance system exists, but it does insure the standardized data collection on non-communicable diseases risk factors, incidence and death causes.

Health services

In 2007, 1135 licensed health facilities reported to the NCDC&PH. 1130 health facilities are working under the MoLHSA supervision; 5 more are working under supervision of other departments and ministries.

In 2007, 19951 physicians worked in the health care system; 68.6 percent of them are women.

In Georgia, population coverage rate with physicians has been stable since 1999; in 2007, this indicator accounted for 454.6 physicians per 100000. Coverage rate is above the average level in Tbilisi (880.4); in regions of Samtskhe-Javakheti and Kvemo Kartli coverage rates are below the average (203.4 and 232.5 correspondingly).

The availability of doctors in Georgia has been stable in Georgia since 1999 and in 2007 it was 454.6 doctors per 100000 persons. Doctor availability indicator is higher than average in Tbilisi (880.4), is low in Kvemo Kartli (232.5) and Samtskhe-Javakheti (203.4) regions.

In 2007, population coverage rate with mid-level medical staff equals 440.1 per 100000. Number of physicians to number of mid-level medical staff ratio is 1:1; according to the WHO recommendations this ratio must be 1:4. Population coverage rate with low medical staff is 129.2.

According to health statistics reports by the end of 2007 health facilities contracted 20 273.5 full time equivalent physicians, including 10199 of them in out-patient facilities.

Population coverage rate with hospital beds was 331.9 per 100000. Inpatient facilities contracted 10074.5 full time equivalent physicians and 11143.0 full time equivalent mid-level medical staff.

In 2007, the total number of hospital admissions increased by 3.8% compared to 2006. Total number of

⁵⁴ www.statistics.ge

⁵⁵ www.ncdc.ge

⁵⁶ www.moh.gov.ge

hospital admissions per 100000 was 6570.8. 291 712 patients were admitted to in-patient facilities and spent there 2 122 331 bed-days. This is 2.8% more than in 2006.

Bed occupancy rate increased and accounted for 146.3 days; average length of stay was 7.2 days; bed rotation rate also increased from 17.1 in 2006 to 20.1 in 2007.

In 2007, reports were received from 610 independent out-patient facilities and 70 policlinics co-social with hospitals.

Out of 610 independent out-patient facilities 250 were independent policlinics (including 80 dental), 39 health centers, 18 women consultancy centers, 69 dispensaries, 213 independent rural ambulatories and 21 cabinets. 483 co-social ambulatories and 301 co-social nurse–midwife posts were functioning in the frame of ambulatory–policlinics associations.

When speaking about the availability of medical services, we must note the privatization in the hospital sector. NGO Transparency International's monitoring of the hospital sector in Georgia (by support from the Eurasia Cooperation Fund) showed that one of the main points of concern is the presumed increase of prices after privatization.⁵⁷

90% of the respondents expressed different viewpoints for avoiding such factor (increase of funding of medical services for socially unprotected groups, health insurance system responsibility, responsibility of the hospital management groups and etc.).

State participation in the medical sector regulation is the most important element of the health service provision throughout the world. In general health sector is one of the mostly regulated sectors in all the countries, meaning the medical quality protection mechanisms. Currently hospital privatization program does not include any monitoring of services provided by new/renewed medical establishments.

Respondents believe that investments made for increasing profit will turn attention to profitable medical services, which will be of threat for the services oriented at the chronic diseases management.

Medical Regulation State Agency (MoLHSA) controls the quality of medical services by means of licensing and permissions. Control of the activities of other establishments, the activities of which are not controlled by the Georgian Law “On Licenses and Permissions”, the control is done through court decisions. Additionally the permission and licensing of medical institutions controls the infrastructure and not the medical service process, which means that there are no indicators and criterias for assessing medical services, which excludes the possibility of having the quality database and planning of situation improvement unified measures. In the developed countries all this is insured by the medical accreditation process.

Considering the above mentioned, we believe it's necessary to create quality monitoring unified routine system, which would. help to identify main weaknesses in the system, to make assessment & analysis, to monitor and evaluate

⁵⁷ Hospital sector privatization monitoring project Analysis

Section F: Primary Health Care

Primary Health Care in Georgia

In 2006 the Ministry of Labor, Health and Social Affairs of Georgia started implementing the family medicine oriented primary healthcare system – by support from the EU, DFID, USAID, WB. Reforms underway in the healthcare system are tightly connected to the Georgian government’s program for economic development and overcoming poverty.⁵⁸

The necessity for reforms was primarily reasoned by the need to decrease the expenses of the Semashko model of healthcare, and also by the need of strengthening the primary healthcare and increasing universal availability of medical services (availability of quality medical service for poor population).

Unavailability of healthcare services, psychological stresses, poor life conditions, low calorie nutrition and etc., together with social indicators create the high risk of development of communicable as well as non-communicable (cardiovascular, respiratory, cancer, and etc.)

One of the main guidelines of the reform must have been the improvement of medical service quality – visible progress would have been achieved by system accreditation, strengthening of the role of professional associations and introduction of the evidence based medicine.

Requirements of reforms must also be assessed on the basis of analyzing the immediate past, when the post-Soviet crisis in Georgia caused the civil war and grave economic problems, followed by the decline of GNP to 78% in 1992-1996, compared to 1990.⁵⁹ Both of these factors negatively affected the healthcare system and its infrastructure.⁶⁰

State allocations for healthcare decreased from 13 USD (1990) to 0.81 USD (1994), because of which the state system was at the edge of complete destruction (2002). As result, 70-85% of total expenses on healthcare came on patients, who were paying for the medical services themselves, by means of informal fees. Due to the high rates of informal fees the quantity of primary healthcare consultations decreased from 7-8 of 1990 to 1.3 visits in 1997 and to 1.8 visits in 2005. In case of minor medical problems patients refrained from using the primary healthcare services and chose self-treatment from pharmacies, with free-selling medications; or in case of serious medical problems went directly to hospitals, which were believed to be best providers of medical services. The table 33 shows the analysis of the existing situation (indicators).⁶¹ (See attachment 1, table 33).

Post-Soviet crisis also affected the population’s health condition. Epidemiological situation regarding non-communicable diseases also worsened: death cases due to CVD made up 70.1%, and second position was for malignant neoplasm – 11% (2001). Problems caused by neuropsychiatry conditions are made up 19% of the total cases of disabilities among IDPs.⁶²

Main characteristics of the Georgian healthcare system reforms are similar to those of the Eastern Europe and FSU countries.⁶³

1 Right of free healthcare was excluded from the Constitution; State allocations were limited to basic package services, which consist of several vertical programs (for example, state program for out-patient care).

⁵⁸ National Report; MoLHSA, 2005

⁵⁹ George Gotsadze et al; *Out-of-pocket and informal payments in health sector: evidence from Georgia*; Health Policy, 2004, vol. 70, issue 1, pages 109-123

⁶⁰ M. Pelni, Useful Information on Primary Healthcare Reform in Georgia, 2006 www.gvg.ge/attachments_p2/24.pdf

⁶¹ George Gotsadze et al; *Out-of-pocket and informal payments in health sector: evidence from Georgia*; Health Policy, 2004, vol. 70, issue 1, pages 109-123

⁶² World Healthcare Organization, 2006; www.who.int

⁶³ Precker, et al, Effectiveness of community health financing in meeting the cost of illness; WHO Bulletin; 2002, 80; 143-150

2 Three-source funding system was introduced:

- a) State budget revenues controlled by the Unified State Fund for Social Insurance, or the Public Health Department (MoLHSA);
- b) Private allocations, which mean official fees, or official co-fees for certain services included in the basic package and fees for services outside the basic package;
- c) Local fees, which are accumulated and managed by municipal/regional (or autonomous republic) government bodies.

Basis of the primary healthcare funding are annually set in the State Program for Dispensary Care. For example, the new budget of the family medicine program was 1 040 000 GEL from June 1 2006 to December 1 2006. The funds allocated for the family medicine program are part of the total budget of the state program for dispensary care, which in 2006 was 21 640 000 GEL. The budget of the state program for dispensary care has been increased to 22 200 000 GEL⁶⁴ in 2007.

If we consider the services provided by specialists the figure will go up to 28 150 000 GEL; the share of new program of family medicine is 4 500 000 GEL. By international standards the main characteristics or functions of the family medicine are: **comprehensive medical service, first contact place of medical service, context-oriented service, continuous and coordinated service.**

For ensuring the medical service quality the MoLHSA of Georgia made the decision to introduce medical facilities voluntary accreditation system to support the working out and implementation of clinical guidelines.

Acting according to the accreditation and approved clinical guidelines will be obligatory for all providers.

Conducting of monitoring and evaluation studies during the process of reforms is the routine process of data collection for determining the progress and tracking general changes. Georgian government works in several directions for further healthcare reforms. The reform is underway throughout the country, but in several regions with the additional support from international donors the reforms are more forced. These de-facto “pilot” regions are Imereti, Adjara, Shida Kartli, Kakheti and Kvemo Kartli.

For tracking the results of reforms at the national and regional level it is necessary to obtain coinciding information.⁶⁵

Monitoring of the primary healthcare, viewpoints of the retrained family doctors and the Status Quo of the primary healthcare in Georgia is the main objective of the project implemented by support from the European Union.⁶⁶ The project is based on the following functions and characteristics of PHC: Primary examination, services continuation, management/coordination of patient and practice, full coverage of services, availability.

For implementing the “primary examination point status” it is necessary to register the population of the action area, which has not been started yet. It is necessary to strengthen the active identification component. According the respondents the process of registration should be finished in 1-3 years.

“Service continuation” – continuation in time, service on holidays and at home – are positive indicators. As for the continuation of information – routine medical recording (recording of risk factors for chronic diseases, their monitoring) – there are serious problems. Among the main reasons is the lack of new medical maps and family doctors negative approach to “paperwork”.

Coordination means the patient management or doctor’s activity (work indicator) and the connection between the first and second levels. Quantity of referrals was critically low (5-6%). Most frequent were consultations of cardiologists, neurologists and surgeons (is associated with the wish for additional trainings in the given spheres). Most frequent laboratory tests: total blood and urine tests – 30-35%, blood glucose – 15%; the need for blood cholesterol test was critically low (0.4%), which confirms the

⁶⁴ 1 GEL=1.70 USD for March, 2009

⁶⁵ Medical Services use and Healthcare Expenditure survey, 2007

⁶⁶ M. Pelni, Useful Information on Primary Healthcare Reform in Georgia, 2006 www.gvg.ge/attachments_p2/24.pdf

deficit of screening activity and preventive strategy in general. Second part of the patient management function concerned the improper connection between the first and second levels. Problems identified were: “deficit of communication between family doctor and specialists”, “specialists do not give us their diagnosis”, “patients do not come back after consultations with specialists”. At the end of 2006 medical doctors in fact did not participate in the administrative - management issues and decision making.

Treatment availability:

a) Financial affordability of services was studied in 2007 in household survey.

b) By means of geographic availability, majority of patients walk and the average time of getting to the primary healthcare unit is 120-150 minutes, as there is no public transport, road is bad and etc.

The given timeframes may be exaggerated by medical doctors, but the problem of direct public transport must be solved (92% of doctors confirm this).

Main recommendations of the project concerned the following:

- Improvement of regular medical records;

- Introduction of registration systems and of the leading role of family doctor in patient control;

- Working out of achievable and realistic standards for doctors in view of treatment availability;

- The newly retrained family doctors are the basis for the primary healthcare reform. We must sustain what has been achieved and use throughout the country the recommendations from medical doctors, professional associations and from this kind of studies.

Study of medical care use and healthcare expenditure in Georgia⁶⁷

During interviews with the households attention was paid to: spread of diseases, indicators of medical care appealability, level of satisfaction with the received services, service availability, medical expenditures.

37% of the respondents had chronic diseases. (There are self-identified diseases which may be, or may be not confirmed by a medical doctor). Almost 1/3 of the respondents have hypertension and 16% of the respondents had acute phase of disease, among them more than half of the respondents had respiratory and cardiovascular diseases.

Acute episodes of diseases during last 30 days – 42% respiratory diseases, 16% heart pain, hypertension crisis. Chronic diseases prevail in high age groups (60+) – 70.2%. The given standard study once again confirmed the priority of non-communicable diseases in the overall morbidity structure.

During last 6 months before the interview 59% of the respondents have had consultations with medical service providers; half of those went to the primary healthcare providers. 40% of medical consultations were with doctor- specialists, mainly in hospitals. **The deficit of primary healthcare identified during the previous monitoring study was seen here also. The main aim of the healthcare sector reform is the increase of medical care appealability indicator at this level and the decrease of patients self-flow to hospitals.**

Annual quantity of ambulatory consultations in the country population per 1000 residents is 175. From June 2006 through June 2007 Georgian households spent approximately 822.7 million GEL (462.2 million USD, exchange rate 1.78). This amount is the 6% of the GDP (2006 nominal GDP=13.784 million GEL. \$121 per 1 resident-):

34% on hospitals

17% on ambulatories

49% on pharmacies

In this case also the ambulatory service is the least used.

68.5% of those with who respondents have consulted were doctor-specialists (meaning in hospitals),

⁶⁷ Medical Services use and Healthcare Expenditure survey, 2007

18.4% are family doctors, 0.9% are nurses and 4.7% - pharmacists. Considering the given fact of the 350 home visits and 170 visits to ambulatories per month we believe are exaggerated.

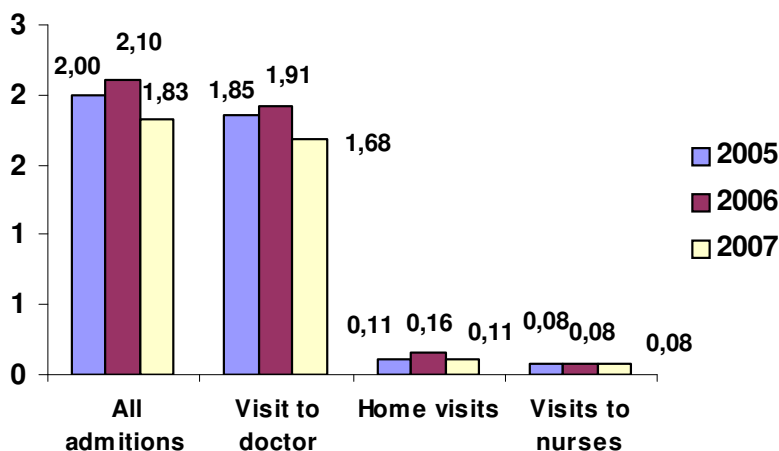


Figure 43 Visits of ambulatory-polyclinic establishments per 1 resident, Georgia, 2005-2007

In framework of the “vertical” impoverished program, a doctor is obliged to conduct 3 visits to population with impoverished policy during 6 months. If a doctor serves an average of 2000 patients, an average of 30% - 600 of patients need 3 obligatory visits. Conclusion – unreal requirements give unreal figures. This means the standards need to be reconsidered. Doctors claim they actively participate in the health promotion and healthy lifestyle (diet, tobacco, alcohol and, etc.) programs.⁶⁸ Question is what programs they mean.

Average annual quantity of medical consultations per 1 resident = 2.0.

Satisfaction with received services -

- _ 2/3 of the respondents express trust to the medical facilities they usually visit.
- _ 91% of the respondents spend more then 12 minutes on medical consultations.
- _ 81% of the respondents claim doctor/nurse fully explained to them the treatment reasons and details.

Availability

- _ Majority of the respondents get to medical establishments in 30 minutes by usual ansport.
- _ 84% of the respondents bought the prescribed medication. 14% of the respondents were not able to purchase medication due to its expenses. 4.2% of the prescribed laboratory tests were not done due to expenses.⁶⁹

Medical insurance (private or corporative) covers less then 1.5% of the population. Among those the highest share comes on the exceptions provided by the “State program for population below the poverty line”.

“Comparison of the two these sources regarding chronic disease prevalence makes us believe that in 2001 there was an incomplete registration. Despite this significant difference, the medical care appealability in these two studies is similar and their comparison shows that the serious increase of medical care appealability came on the poorest part of the population. The given viewpoint is confirmed by the fact that less respondents name lack of funds as the reason for not appealing for medical care”.

⁶⁸ M. Pelni, Useful Information on Primary Healthcare Reform in Georgia, 2006 www.gvg.ge/attachments_p2/24.pdf

⁶⁹ Medical Services use and Healthcare Expenditure survey, 2007

The reasons for medical service refusal are: *'there is no treatment'*, *'disease is not serious enough'*, *'treatment is not needed at that moment'*.

Georgian Society of Hypertension has been conducting pharmaco-epidemiological studies since 2000, for identifying arterial hypertension management defects in Georgian population. The study design provides for the interviewing of both medical doctors and patients. Majority of doctors believe the financial problems of the patients to be the main barrier in the process of prolonged treatment of arterial hypertension, while 62% of the patients have negative approach to the prolonged treatment.

Considering all the above motioned the main direction for operative intervention is the patient awareness and improvement of communication between doctors and patients. (trust to doctors and as result motivation for prolonged treatment is reasoned by a certain model of doctor's behavior – enough competence, identification of patient problem, ability of adequate explaining, punctuality and etc.).

Medical Expenses

Annual medical expenses per 1 resident is 216.2 GEL (129 USD). Almost half of the expenses of households (49%) comes on medications purchased in pharmacies and other medical needs, 34% on hospitals and 17% on ambulatory establishments.

Total expenses for ambulatory treatment in one episode per 1 resident (meaning amount paid at the ambulatory + medications purchased at any point):

Home visit	7.0 GEL
Village Ambulatory	4.9 GEL
Polyclinic	21.7 GEL
Women's Consultation	3.0 GEL
Ambulatory Departments of Hospitals	45.0 GEL

Cost of ambulatory treatment (excluding medications costs outside of medical facilities) per 1 resident (amount paid at the medical facility + medication purchased there):

Home visit	1.8 GEL
Village Ambulatory	0.8 GEL
Polyclinic	9.0 GEL
Women's Consultation	1.6 GEL
Ambulatory Departments of Hospitals	26.1 GEL

Expenses for medications necessary for ambulatory treatment by groups of population; expenses for medications per 1 resident annually:

Total	47.7 GEL
City	52.2 GEL
Village	43.3 GEL
Tbilisi	555.5 GEL
Eastern Georgia	37.5 GEL
Western Georgia	51.4 GEL
Poorest 20%	36.9 GEL
Richest 20%	70.3 GEL

By beneficiaries of the state program for population below the line of poverty:

Beneficiaries – 70 000 points	47.9 GEL
Non-beneficiaries – over 70 000 points or families without points	48.6 GEL

Expenses for ambulatory treatment of chronic pathologies, or self-treatment

Patients with chronic diseases and periodic expenses for treatment (not been acute during 30 days before the examination)

Average monthly amount necessary to treatment of chronic patients (GEL)	
Medication cost	18.5 GEL
Cost of medical devices	4.7 GEL
Cost of herbal and homeopathic devices	10.5 GEL
Cost of medical consultations	7.7 GEL
Cost of care and physiotherapy	50.6 GEL

Expenses for self-treatment

Average annual expense per 1 resident for each case	
Medication	12.6 GEL
Medical devices	12.6 GEL
Diagnostic examination	16.4 GEL

Where do the patients, who cannot reach the primary healthcare units, go?

Adjara – 20% goes nowhere, use the emergency services

55% cannot answer

Imereti – 80% cannot answer

5% goes nowhere, use the emergency services

Kakheti – 12% goes nowhere, use the emergency services

15% cannot answer⁷⁰

Doctors believe one of the alternatives for the primary healthcare services is the emergency service. In case of free-of-charge emergency service, their services are often used for no urgent causes.

EU monitoring study mentions the ‘gate keeping’ idea - only those patients will receive free-of-charge medical service, which will be registered with the family doctor by the state ambulatory program. The registration of population for the “primary health care” system has not started yet (by the end of 2006).

Also the patient control indicator – monthly utilization indicator, meaning the quantity of patients visited medical institutions. Average indicator is 9.31 per day, which significantly exceeds the average country indicator of Georgia – 1.6 patients per day⁷¹, although it is less than average figure of Western Europe – 30 patients per day⁷².

Through interviews with the representatives of the main informant organization – MoLHSA of Georgia has shown the following:

The main weakness of non-communicable diseases management in Georgian population is the exclusion of the primary healthcare level from the management of those diseases. Doctor-specialist sets the main treatment strategy, but patient’s further management and monitoring is the direct function of the primary healthcare level. Because of this patients avoid appealing to the primary healthcare level mainly due to distrust and lack of finances. The share of “out of pocket” payment for healthcare is very

⁷⁰ M. Pelni, Useful Information on Primary Healthcare Reform in Georgia, 2006 www.gvg.ge/attachments_p2/24.pdf

⁷¹ www.moh.gov.ge

⁷² Richard B. Saltman et al; *Conceptualizing decentralization in European health systems: a functional perspective*; Health Economics, Policy and Law, 2006, pp127-147

high (75%) in our country⁷³. Patient saves funds that way. The low level of population awareness on non-communicable diseases, lack and expensiveness of sports facilities, product safety control and monitoring state system improper functioning are also quite important.

In the frame of the state primary healthcare program, in the rehabilitated primary healthcare system it is advisable to fund those services, which provide for monitoring-supervision of chronic diseases (cardiovascular diseases, diabetes mellitus, bronchial asthma and other respiratory diseases, cancer).

Free-of-charge services must be oriented to the disease prevention, early detection, screening and monitoring.

Non-communicable disease prevention policy should be based on the World Health Organization strategies and evidences in a view of unified healthcare system policy.

40-45% of the total health expenditures come on non-communicable diseases (**there is no precise accounting**).

The determinants of the appealability of patients to primary healthcare facilities, financial and geographic availability are the state obligations. Affordability in our country can be achieved by state allocations to the primary healthcare service and/or different insurance schemes (including community insurance), covering the population totally. One of the decisive factors is the medical staff education especially in big cities with great concurrence and also organization's infrastructure.

Patient appealability is of course determined by the availability of healthcare services. As long as 54% (2 million 400 thousand) of Georgian population lives under the poverty line, the appealability to the primary healthcare facilities is determined by the degree of state program funding and the quality of services provided.⁷⁴

There is no reliable tool of the registration of non-communicable diseases in the country. In the countries where the health information systems are relatively better developed and the healthcare services are relatively more available, the most reliable tool of non-communicable diseases registration is the medical statistics collected at the of primary healthcare level. The given tool does not really function in Georgia due to the low appealability. Other data collection instruments are not being used either.

- 1 Medical education of the youth (inclusion of health promotion issues in school and higher education programs).
- 2 Improvement of financial support; full funding of primary healthcare services by the State, or maximum coverage of population by the insurance.
- 3 Improvement of geographic availability.
- 4 Improvement of medical doctors' educational level.
- 5 Strengthening of the nurse's role and improvement of their knowledge.
- 6 Improvement of the sanitary culture of patients.

The given issue is covered by the Georgian Law "On Public Health". There also is the normative decree of the Minister on public health programs, which due to the low funding do not consider adequately the priorities in view of morbidity burden. Non-communicable diseases prevention mechanism is also included in the primary healthcare program, but it is also not enough, again due to low funding. **Considering the above mentioned, the state legislative documents, decrees and regulations are not based on the policy in the given field, strategies are not set by considering the real statistical situation.**

For activating non-communicable diseases prevention in Georgia the most necessary is identifying the main risk factors and work out effective mechanisms to tackling them.

⁷³ National Report; MoLHSA, 2006

⁷⁴ National Report; MoLHSA, 2006

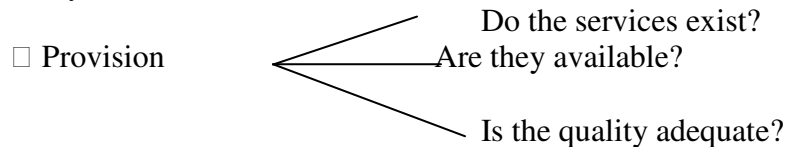
The active stakeholders in the sphere are family doctors and nurses. **After the policy and experience based tactical models will be determined it will be possible to speak about experts panel and stakeholders.**

Problems with doctors: Low motivation towards professional development as well as medical service quality control system creation; poor interpersonal relations; violation of doctor's autonomy by administrative methods and also influence from pharmaceutical companies; doctors non-participation in the healthcare management policy planning and deficit of initiatives; also, the continuous professional development is of voluntary character and completely is the personal responsibility of doctors.

System Weaknesses: Non-communicable disease management policy and strategy is not determined in the healthcare system; reliable methods of data collection, analyzes, expertise are not introduced. It is necessary to improve the transparency of the decision making processes and to work out strong guarantees for participation of competent sides.

Problems with patients - poor culture of own health care and deficit of responsibility
In 2008 the Georgian Hypertension Research Society conducted the primary healthcare reform monitoring project for improving the management of cardiovascular diseases.

Study directions:



- Usage – are these services being used?
- Coverage – is the target population covered?
- Adequacy – is there any improvement in disease or health related behavior management?
- Reliability – was the program influenced by any event?

Interviews with medical personnel and population (structural, in-depth interview, focus-groups)
Status of the “primary examination point” – registration of population is done together with a nurse, or by a nurse. Children of 0-14 of age have been mainly registered. Because of this the screening priorities of diseases and their risk factors are unknown.

Continuous of services – medical personnel reports they do not get home visits on holidays, as for the routine medical records, especially by means of patient behavior model, its changes, treatment monitoring, still remains inadequate.⁷⁵

In the EU study⁷⁶ the weakness in the continuous of services is explained by the negative attitude of doctors to the so called “paperwork”. We believe, the attitude of patients to the necessity of treatment process monitoring by a doctor, is also very important (only 20% of the patients say they monitor the anti-hypertension treatment together with a doctor). Another problem is the lack of doctor's time (74% of the respondent patients report doctors are in a hurry during their visits).

⁷⁵ Primary Healthcare Reform Monitoring Project; Georgian Society of Hypertension, 2008

⁷⁶ M. Pelni, Useful Information on Primary Healthcare Reform in Georgia, 2006 www.gvg.ge/attachments_p2/24.pdf

Patient control

The first three in the list of disease spectrum of adult population are: arterial hypertension, ischemic heart disease, acute respiratory diseases.

In 70% of the cases chronic diseases are controlled by specialists' consultation; mostly the consultation of cardiologists are used (62%).

The most rarely used laboratory test is the blood cholesterol (10%).

As for the connection between the first the second level, the communication factor dynamics are positive after 3 years since the launch of reform. Still there is lack of screening activities as well prevention strategies –just in 6% of cases blood pressure was measured without home visits.

The fact that most frequently used cardiologist consultation and the most important screening test – cholesterol are not included in free-of-charge medical services, shows the weakness of the prevention strategy.

Participation of one of the main actors of prevention activity, nurses in the given sphere is also critically low, which again was confirmed by the households' interviews⁷⁷. Nurses consultation was reported in 0.9% of cases, while the consultation activity of pharmacists in disease management is 4.8%.

35% of the interviewed pharmacists report that 35% of the customers visiting pharmacies ask about the rules of taking medications and about any side-effects. It is unfortunate that in 40% customers wanted to chose the medicament and in 5% to measure blood pressure; and the motive was financial barriers of doctor's visit (significant lack of awareness regarding primary healthcare free services).

As for the confidence in doctors and satisfaction with services – 20% are satisfied with the quality of medical assistance; in case of choice 34% will go to other facilities.

Main recommendations of the project after 3 years from the start of reforms are oriented at improvement of chronic disease management weaknesses:

- determining the screening indicators by the family doctor team in coverage area (risk factors – behavior and biological);
- Strengthening the prevention strategy and of the role of nurses;
- Formation of patently relations between doctors and patients (educational interventions by participation of psychologists);
- Return to prescription practice opposite to self-treatment.

During the research (Curatio, 2007) in the medical service financial affordability sector, it is stressed that 84% of the respondents purchased medication for treatment of chronic diseases, 14% of the respondents did not (could not) purchase medications. The question is if the respondents have purchased the adequate medication, as 46% of population purchase inadequate anti-hypertension medications.⁷⁸

- Population awareness of the risks of self-treatment of chronic diseases, necessity of continuous treatment, low cost-effectiveness of medication's frequent change, possibilities avoiding hospitalization and acuteness of diseases.

According to the pharmaco-epidemiology study, 60% of the hypertension patients start self-treatment, does dose titration and starts combined treatment by themselves.⁷⁹

The Hypertension Control Community Program implemented by the American International Health Association (AIHA), by support of the US Agency for International Development (USAID), provided for the provision of free medication for hypertension treatment to patients, continuous training of primary healthcare personnel and etc. 562 patients from Mtskheta-Mtianeti (2000-2003) and Shida

⁷⁷ Household Survey on Health Service Utilization and Expenditure (HUES), 2007

⁷⁸ Non-communicable Diseases Risk-Factors Survey; Georgia, 2006-2007; www.ncdc.ge

⁷⁹ Pharmaco-epidemiological survey, Georgian Society of Hypertension; 2000-2008

Kartli (2005-2007) regions participated in the program. Results showed that hypertension control can be improved quickly, cheaply and even with limited resources.

In 2007 the AIHA/USAID started the new program – Management of Main Chronic Non-communicable Diseases in a Community (Gori, Ozurgeti). 288 patients were provided with free medications (anti-hypertension medications from Georgian pharmaceutical company GMP and medications provided by American partners). Risk factors control was done by non-medication approach.

Intervention programs implemented by modern standard methods are important for determining the diseases management model in the population, but the complications with successful treatment of non-communicable diseases outside of such programs must also be considered. For example, the main weakness of hypertension control is the critically low agreement level from patients, poor communication between doctors and patients and lack of awareness in population on the necessity of prolonged treatment and permanent participation of a doctor in the process.

In the Master Plan for Primary Healthcare Development in Georgia (2007), article 2 – funding of primary healthcare, it is stressed that the State will fund full package of primary healthcare services for the poor segment of Georgian population till the end of 2008 (34.8% of the total population). Identified individual receives state subsidies by means of a voucher, which is equal to the annual insurance premium, both for the first level and hospital services. Gradually the annual vouchers will be replaced by everlasting vouchers/insurance services. Beneficiaries will receive state subsidies till they leave the target groups, change social status, or death. Remaining part of population has to purchase first level service package itself. In the transition period the ambulatory services provider will receive from the state buyer 30% of the primary healthcare funding, so they can provide services to the uninsured part of population, 70% of the funding will be used to fund primary healthcare services for the insured.

By the end of 2008 16.7% of the total population has the insurance package for poor population and 30.1% of the population under the poverty line. This means the primary healthcare development plan, by means of coverage by insurance medicine (34.8% and real 16.7%) has not been realized.

(See attachment 1, table 34, 35)

Guidelines:

Ministry of Labor, Health and Social Affairs of Georgia has made first steps towards starting the continues process of working out and implementing the clinical guidelines. With the Order #945, dated March 2006, has been approved the regulations of the clinical guidelines committee.

With the Order #126/o, dated May 8, 2006 was approved the list of committee members. On May 18, 2006 the decision on working out 10 guidelines was made.

The presentation of the worked out guidelines was held on November 21, 2006; among them 9 guidelines for the management of non-communicable diseases (arterial hypertension, heart failure, ischemic heart disease, chest pain, chronic coughs and etc.).

In the framework of the primary healthcare development project, which is underway by support from the World Bank, after the national clinical guidelines and treatment protocols were worked out, it has been planned to start their revision and implementation.

Three main factors, which insure the successful implementation process are adapted guideline and protocol; motivated doctor; obeying patient.

Three main barriers are: non-adapted protocol; lack of the State support; doctor's resistance.

Implementation process is advisable to be as training for small (8-10 persons) groups, by means of interactive discussion.

Section G: Community capacity

Interesting information about the healthcare issues' awareness is given by the study conducted by the Oxford Political Management Group before the start of primary healthcare reform, at the end of 2005. Its aim was quality assessment of the knowledge, attitudes and behaviors in pilot regions.

The study was aimed at data collection from meetings with focus groups.

Total of 18 discussions were held with focus groups of young people of both sexes and also of older age groups on 3 topics – maternal and child health, infectious and non-communicable diseases.

- 1 Most frequently named health problem – cardiovascular diseases (high blood pressure) and goiter.
- 2 Expectations from new ambulatory services – “we are proud of new ambulatories” and “we have great hopes for the new services”.⁸⁰

Risk Factor Awareness

The awareness of the risk factors of non-communicable diseases in Georgian population is not ideal and differs.

Despite the fact that doctors gave information about arterial hypertension to 66.2% of patients and that the indicator of arterial pressure measuring during last years is 84.5% and that 83% of the population has blood pressure measuring devices at home (which surprises our foreign colleagues very often), during the risk factors study in 2007⁸¹, the 1/3 of hypertensives have been newly identified and 46% of the patients take un-recommended medication.

Awareness of cholesterol indicator (during the last year) is quite low – 8.6%, only 3.8% of the respondents report about the high cholesterol in anamnesis, while the total cholesterol indicator is quite high – 72.1% (5 mmol/l and more).

Awareness of hyperglycemia is also very low – 18.3%.

As for the awareness of tobacco harm - 75.6% of daily smokers understand it fully and only 28.1% of them have received advice from medical professional. Only 12.5% of respondents were advised to stop smoking by doctor; 13.5% were advised to lose weight; 14% to decrease fat consumption; 14.2% to decrease salt consumption; 9.9% to increase physical activity; 3.9% to drink less during the last year.^{82 83}

Motivation for behavior changes

According to the pharmaco-epidemiological studies (2000-2007) by the Georgian hypertension research society, to the question “Do you manage to consider the algorithm of treatment stages during your practice?”, which means medication and non-medication treatment stages, majority of the doctors answer: “No” and the most frequent explanation is – “Rare contacts with patients”, “Patient does not agree”.

Patient consent is the basis for the doctor's successful practice; and motivation is the fundamental in the relations with patients.

Poor patient-doctor communication may be the predictor of iatrogenic. The doctor's correct tactics in conceiving a patient about the high individual risk of disease complications development is the

⁸⁰ Thea Mirianashvili et al; Rapid Survey of Local Understanding – Knowledge, Attitudes and Behaviors of Selected Health Issues in Adjara and Imereti, Georgia; 2006

⁸¹ Non-communicable Diseases Risk-Factors Survey; Georgia, 2006-2007; www.ncdc.ge

⁸² Non-communicable Diseases Risk-Factors Survey; Georgia, 2006-2007; www.ncdc.ge

⁸³ Pharmaco-epidemiological survey, Georgian Society of Hypertension; 2000-2008

determinant of patient behavior during chronic diseases. Non-communicable diseases' inadequate management behavior model is very important among the risk-related behaviors in Georgia. During the formation of the latter must be considered the approach of patients to prolonged treatment, patients' psychological status in general ("I have a more serious problem, then just high pressure" and etc.). Ineffectiveness of therapeutic treatment on one hand and low effectiveness of non-medication recommendations on the other hand is the reason of the inertness of patients during treatment process. Consent to behavior changes (is a lot harder to achieve then insertion of a patient in medication treatment process) is reasoned by the relation of recommendations to the life quality change, healthy relations with a doctor and finally, **scientific approval of the chosen prevention advises.** This part of medicine borders to art, as the professionalism of a doctor is decisive, in order for a patient to make a well considered decision, furthermore that majority of preventive measures results in certain restrictions.

Effectiveness of advises depends on following parameters:

- enough time and calm atmosphere;
- patient confidence in a doctor and nurse;
- partner relations with a patient are the basis for a success.

Primary healthcare is an ideal place for receiving recommendations

There are different reasons of human rights violations in the healthcare: lack of information, legislative mistakes, deficit of medical services, inadequate funding of state health programs, inadequate administration, stigma and etc.

Section H: Research capacity

Unfortunately, during the last years the activities of the country regarding medical sciences have significantly decreased. As for the evidence based representative studies, first of all should be mentioned the Reproductive Health Survey (1999, 2005)^{84 85}, Stroke Incidence Study (2000)⁸⁶ and the currently underway Reproductive Women's Mortality Study, all these surveys are conducted by financial and technical support of the donor organizations.

Cardiovascular and respiratory diseases management guidelines elaborated by professional associations may be considered as an important activity from scientific-practical viewpoint.

One of the important activities is the creating and implementing of professional education and continuous professional development programs, also working out of primary healthcare clinical recommendations and protocols together with Georgian hypertension, cardiology, endocrinology, respiratory and other associations. This will create serious basis for the development of the best practices of primary healthcare.

Development of the individual workplace appraisal schemes of the family medicine professionals, development of clinical evaluation tools and their implementing at the workplaces – are very important activities, which comes along with the primary healthcare reform monitoring recommendations. By the

⁸⁴ Reproductive Health Survey, Georgia 1999-2000; www.ncdc.ge

⁸⁵ Reproductive Health Survey, Georgia 2005; www.ncdc.ge

⁸⁶ Tsiskaridze Alexander et al; *Stroke incidence and 30-day case-fatality in a suburb of Tbilisi: results of the first prospective population-based study in Georgia*; Stroke; a journal of cerebral circulation 2004;35(11):2523-8.

same viewpoint it is interesting to implement the self-evaluation and collegial discussions.

Family Medicine National Training Centre Ltd. has retrained: 240 doctors in Tbilisi (by financial support of the WHO – Design of Education Program and Training for Primary Healthcare Doctors) and over 300 nurses; over 400 healthcare professionals (accredited program Family Medicine Practice Organization and Management); 100 teachers (accredited program – Educational Skills – Learning and Teaching – Education Module for Family Doctors and General Practitioner Nurses and for Teachers); over 350 doctors and nurses (accredited program - CVD Prevention in Primary Healthcare).

A very important activity is to determine demand for essential medications for elaboration the schemes of medication reimbursement in primary healthcare ((Estimating drug requirements – WHO)-DFID, EC-GVG) (WHO/DFID). Unfortunately, the existing medications are very scarce in the family doctors' basic package.

Discussion of the recommendations of the monitoring projects listed in this report must be done in parallel with medical audit studies and the lack of such workshops, round table meetings identifies the communication deficit..

During fall-winter 2003 and spring 2004 in collaboration with the National Family Medicine Training Center (NFMTC) were held the series of trainings – Cardiovascular Disease Prevention in Primary Healthcare for primary healthcare doctors. Methodology of health related behavior risks assessment was discussed along with other issues. During the trainings a special handbook for primary healthcare personnel was elaborated. These training courses were than incorporated in the post-diploma and continuous medical education system.

In 2006 the Healthcare Service Researches Center (CHSR) and CINDI group participated in the EU and HLSP Ltd (UK) organized primary healthcare promotion project: Medical Staff and Managers' Training for Continuous Professional Development - the asthma multidisciplinary management training for doctors and nurses. The project covered 78 family doctors and 80 primary healthcare nurses in Kakheti region. Methodology of professional development training “short course” and competence evaluation was prepared during the project.

Over 300 doctors have been trained during for the primary healthcare institutions in non-communicable diseases during 2007-2008. The topics of the training course included CVD management (in collaboration with the Georgian Cardiology College), management of respiratory diseases (in collaboration with the Georgian Respiratory Association) and etc.

At the end of 2008, in the framework of the implementation of diseases management national guidelines the training course for Samegrelo region medical doctors (in collaboration with the Georgian Cardiology College) was conducted.

Preventive medicine is being taught at the Faculty of Medicine and Public Health at the Tbilisi State Medical University.

In 2008 implementation of diseases management guidelines in the primary healthcare system was started.

We take it essential to involve guidelines authors and other experts in decision making process in healthcare system.

Section I: Financial resources

Health and Social Programs Agency is the source of non-communicable diseases State funding:

- Budgetary allocations for village ambulatory services provide for the work contracts with doctors and nurses. The same package also provides for detection, management of chronic diseases and in case of referral – specialist’s consultation. Main attention is paid to endocrine patients’ detection and referral to specialists.

It also provides for the ambulatory service for children under 3 years of age (visit to doctor, home visit, monitoring of child’s development, chronic diseases’ detection). This provides for the capital financing (2.72 GEL for each child per month).

- Allocations of the 2009 state program for the population urgent services are provided for the following: imbursement 75% of medical expenses for certain nosology groups of the age over 60 (nosologies are unknown), as for critical cases, all the nosologies are fully paid for just 6 days.

Allocations of the 2009 state program for heart surgery provide for the reimbursement of 70% of treatment expenses for heart and vascular pathologies and of the 50% of expenses for angioplasty surgery. Surgeries of heart congenital malformations in children under 18 years of age are free and covered by 70% over 18. Onco-hematology services for the children under 18 are also paid fully.

Budgetary allocations for the state program for primary healthcare are significantly cut down. In fact there is no funding for the medical services for urban population over the age 3, especially for non-communicable diseases.

Due to the given fact, after a serious discussion the 2008 the programs have been prolonged for 3 months. Government has promised to reconsider its decisions.

It was very interesting to request information in the given direction from the Health and Social Affairs Committee of the parliament of Georgia. Despite many efforts we could not get any information (the so called non-response is a very important indicator).

The activities of local and international organizations in the sphere of non-communicable diseases have been discussed in detail in the previous sections of this report. We would like to emphasize the activities of the Eurasia Cooperation Fund, which has funded two monitoring projects of the healthcare reform.

As mentioned above, the budgetary allocations for the primary healthcare state program have been reconsidered by means of decreasing the funding and by activating the private insurance sector.

Consultations are underway with 9 insurance companies. It would have been interesting to receive intermediary information from legislative bodies, but it did not happen.

Conclusions

One of the strategic directions of the Ministry of Labor, Health and Social Affairs is the insuring of national security by means of minimizing the public health problems and creating healthy environment for the population.

One of the main goals is:

- Collection of necessary quality information for planning and implementing of the adequate surveillance system of non-communicable disease prevention and control.

Non-communicable disease situation assessment in Georgia may become the basis for the surveillance system in the country, which in return, means the implementation of intervention measures against primary risk factors. The given recommendations must by all means consider the country specifics.

Relation between Georgian population - as of medical service client and the healthcare system - as medical service provider, is significantly complicated. This is reasoned by the insolvency of the major part of Georgian population, also by the disrupted state funding and etc. Marketing situation analysis shows that patients inadequately judge own health condition and of the healthcare system possibilities. This causes inadequate contacts between population and healthcare personnel and permanent problems in disease management.

As in other countries of Europe, non-communicable diseases (cardiovascular diseases, cancer, diabetes mellitus and chronic pulmonary obstructive diseases) are the main causes of early deaths and morbidity. Additionally Georgia is among those countries of Eastern Europe and former Soviet Union, where in 1970 started and in 1990 gets to maximum the increase of non-communicable diseases (primarily from cardiovascular diseases) mortality. This caused a significant difference in the average life expectancy between Georgia and Western European countries.

As it was expected the analysis identified different kind of problems, which are associated with healthcare system, medical personnel and population.

Problems are of social, economic and organizational character.

Problems associated with healthcare system:

- Poor reliability of statistics available in the country.
 - Lack of standard epidemiological researches at the country level;
 - Information based only on the medical appealability;
 - Information gathered without autopsy materials;
 - Inadequate recording of death cause documentation;
 - Principle of cases registration – based on nosology and program funding;
- Lack of the national policy for tackling non-communicable diseases in the country
 - Lack of epidemiological and preventive programs in the sphere of non-communicable diseases;
 - Ignoring the participation of the experts groups together with policy makers in the planning of priority preventive interventions;
 - Deficit of fund-raising by state structures from donor organizations and private sector.
- Deficit of availability of comprehensive, continuous, coordinated, high-quality medical service at the primary healthcare level:
 - ✓ Lack of information about risk factors and disease priorities among the target population;
 - ✓ Absence of screening activities;
 - ✓ Inadequacy of prevention strategy;
 - ✓ Significant deficit of free-of-charge medical services;
 - ✓ Defects in the process of clinical guidelines implementation;

- ✓ Lack of medical audit and reform monitoring projects;
- ✓ Large number of persons outside the programs covered by medical insurance and primary healthcare services;
- ✓ Lack of complex medical interventions in specific risk groups (IDP's, conflict zone residents and etc.)

Problems associated with medical personnel

- Insufficient usage of non-communicable diseases' management algorithms
 - ✓ Doctors ignore the need for identifying patients personal risk group;
 - ✓ Lack of primary and secondary prevention interventions;
 - ✓ Non-consideration of the medication dose titration, side-effects management and treatment optimization principles;
 - ✓ Weakness of nurse role;
 - ✓ Low communication level between doctors and patients;
 - ✓ Lack of doctors' activities regarding patient motivation improving for non-communicable diseases treatment;
 - ✓ Deficit of patient awareness and their education.

Population-associated problems

- Critically low awareness of patients regarding the necessity for doctors' permanent participation in non-communicable disease management process
 - ✓ Negative approach to non-communicable diseases prolonged treatment; and low consent to treatment;
 - ✓ Patients self-treatment.
- Low level of response to participation in preventive interventions.

Positive issues in non-communicable diseases management

Creation of the Non-communicable Disease Epidemiology and Health Promotion Department under the National Center for Disease Control and Public Health, which works for the non-communicable diseases and of their risk factors epidemiological analysis, actively participates in the planning and conducting of researches.

Oncology prevention centre is aimed at the improvement of pre-cancer and cancer diseases early detection and prevention of. Their main projects:

2006 - with the funding of the European School of Oncologists and in the framework of the Challenge Fund a preventive breast examination project in Tbilisi secondary school teachers was conducted. The activities were: meeting-lectures on importance of prevention, early detection and healthy lifestyle.

2006-2007 – Prevention and Early Detection of Cancer Diseases in the Baku-Ceyhan Pipeline Route Population, funded by the BP Exploration (Caspian Sea) Limited.

2007-2008 – Prevention and Early Detection of Cancer Diseases in the Baku-Supsa Gas-Pipe Route Population, funded by the BP Exploration (Caspian Sea) Limited and by support of UNFPA.

For the first time in Georgia, by co-funding from the Tbilisi Municipality and the UN Population Fund and under patronage of Mrs. Sandra Elizabeth Rulovs, in May 2008 the breast and cervix uteri cancer

prevention program was launched. 40-70 years go through breast screening and 25-60 years women go through cervix uteri screening. Screenings are free.

Following examinations are held in the National Screening Centre: breast physical examination by a mammologist, breast radiographic examination by BIRAD system, echoscopy breast examination and breast cytopathology examination. As for the cervix uteri, all the participating women go through PAP examination.

9990 women (85 malignant cancer cases) have been screened regarding breast cancer and 9448 women (1030 cases of atypical test results) regarding cervix uteri.

Contacts have established with the business sector, namely with the association of employers, in order to actively participate in the screening campaign organization.

Letters were sent to Tbilisi municipalities requesting arranging the teachers organized participation in the screening program. For supporting the program meeting with the donor organizations and Embassies operating in Tbilisi was organized by the First Lady of Georgia.

Total budget of 2008 was set to 725 000 GEL and in 2009 the figure was increased to 900 000 GEL. UNDP is the co-funder.

Since last April the first mobile mammography- "Mammobile" has been functioning. It is the Siemens, mobile, completely computerized, digital technology mammograph system, which screens women throughout Tbilisi for breast cancer. It allows screening up to 100 women daily everywhere.

There also exists specially made ncological-gynecological mobile and group of specialists for conducting cervix uteri screening.

The program is quite successful due to the high appealability from women. An average of 1500 women goes through examinations every month.

One of the most important social programs of the Tbilisi Government in 2008 was the medical insurance of families with rating points from 70 000 to 100 000 and the insurance of families with rating points under 70 000 which is funded from the federal budget. The program continues in 2009 also. It is noteworthy that the insurance companies had to pay for the medical services of the so called "ill" contingent.

Considering the above mentioned, we believe, it is necessary to extend the preventive programs in the following directions:

1. Prostatate cancer screening among males over 50 years of age.
2. Thyroid gland cancer screening. This localization cancer incidence has significantly increased due to the Chernobyl catastrophe syndrome and also it's highly correlated with breast cancer.
3. Colorectal cancer screening among males over 50 years of age. These programs definitely will reduce the mortality due to cancer.
4. Early detection (screening) of cardiovascular diseases (early detection of symptoms and risk factors) after the age 50. The proposed activities are: blood cholesterol, blood glucose, echocardiographia (if necessary endocardiostopia). (National Security Gordon Braun Program-cardiovascular and hypertension diseases prevention program)

The study conducted by the Department of Statistics of the Ministry of Economic Development in 2006 shows that in 2005 the consumption of median calories per person (kcalories/day) was 2 670 kcalories, which is almost 300 kcalories more compared to 2002 (2 360 kcalories). By the same study, the share of nutrients in the food energy consumption was as follows: fats – 21%, proteins – 12%, carbohydrates – 68%. All these indicators fulfill the WHO recommendations, and thus are not enough for elaboration of the national guiding principles for non-communicable diseases management.

Positive actions were the publications – "Nutrition and Prevention of Chronic Diseases", "Recommendations for Healthy Nutrition", "Promotion of Healthy Nutrition by Consultations in Primary Healthcare" and etc., which have been prepared in framework of the cooperation of the Georgian government and the World Healthcare Organization European Regional Office (APW).

Recommendations

- Improvement of the non-communicable diseases' morbidity and mortality statistical data collection system in the country;
- Adapting of the non-communicable diseases risk-factors screening and monitoring programs at the country level;
- Planning of the national policy tackling non-communicable diseases with real cooperation of the State healthcare structures and professional associations;
- Elaboration of the cost-effective program of Arterial Hypertension as the main CVD risk-factor management for decreasing the mortality caused by the circulatory system diseases;
- Diabetes Mellitus program provision at the State and Municipal levels;
- Expanding cancer screening activities in framework of the existing State and Municipal programs;
- Expanding respiratory diseases' screening;
- Improving the quality of primary healthcare services for identifying, evaluating, preventing and treating chronic diseases and using modern standards;
- Implementation of the non-communicable diseases' management unified guidelines in the healthcare system and their periodic renewal, based on evidence;
- Elaboration of nutrition recommendations considering Georgian population nutritional and cultural characteristics by identifying the share of ingredients in the food ratio;
- Improvement of the doctors' professional knowledge and skills for increasing the level of consent of patients to prolonged treatment;
- Improvement of the nurse education model;
- Integrated approach to the non-communicable diseases' management – medical doctor, nurse, pharmacist, health educator – for effective collaboration.

appendix 1

Table 1 Risk factors in different diseases development, %

Diseases	Unhealthy life style	Genetic risk	Environmental pollution	Inadequate health care
Ischemic heart diseases	60	18	12	10
Cerebrovascular diseases	65	17	13	5
malignant neoplasms	45	26	19	10
diabetes	35	53	2	10
Pneumonia	19	18	43	20
Emphysema & bronchial asthma	35	15	40	10
Liver cirrhosis	70	18	9	3
Accidents	55	5	30	10

Table 2 Burden of diseases by causes (DALYs) 2002

	DALYs	%
All cases	891192	100
1 Ischemic heart diseases	163411	18.3
2. Cerebrovascular diseases	122449	13.7
3. Unipolar depression	61490	6.9
4. perinatal status	37345	4.2
5. osteoartrosis	24362	2.7
6. Medication related disorders	21844	2.4
7. Liver cirrhosis	21203	2.4
8. Acquired deafness	19467	2.2
9. Diabetes	17864	2.0
10. Eye disorders caused by age	17793	2.0

Table 3 Morbidity with acute and chronic diseases by main disease groups

	2003	2004	2005	2006	2007
Number of registered newly diagnosed cases, thsd. of cases	574,8	621,0	695,2	761,0	767,8
of which:					
Infectious and parasitic diseases	43,4	55,6	54,0	44,9	50,8
Neoplasms	7,1	8,4	8,4	9,2	7,5
Endocrine, nutritional and metabolic diseases	28,9	30,0	31,4	27,7	27,3
Diseases of blood and blood forming organs	7,4	8,6	8,5	9,4	10,3
Mental and behavioural disorders	6,1	7,6	7,0	6,8	5,6
Diseases of the nervous system and sense organs	45,2	51,5	54,9	...	...
*Diseases of the nervous system	...	...	...	31,9	26,0
* Diseases of the eye and adnexa	...	...	...	30,1	24,6
* Diseases of the ear and mastoid process	...	...	...	16,0	15,4
Diseases of the circulatory system	64,1	70,7	82,5	83,2	71,2
Diseases of the respiratory system	236,1	235,5	249,1	313,8	288,8
Diseases of the digestive organs	39,8	42,0	84,9	56,6	120,7
Diseases of urogenital system	27,0	31,6	31,6	40,4	33,8
Complications of pregnancy, childbirth and postnatal period	4,0	6,0	8,2	9,5	7,2
Diseases of the skin and subcutaneous tissue	21,1	23,8	23,3	27,0	27,0
Diseases of musculoskeletal system and connective tissue	10,2	10,7	13,2	17,8	17,1
Congenital malformations	1,0	1,2	1,1	1,3	1,3
Certain conditions originated in the perinatal period	2,3	2,5	2,5	2,0	1,9
Symptoms, signs and incorrectly identified states	2,4	3,2	2,5	4,0	2,9
Injuries and poisonings	28,7	32,5	32,0	29,7	28,7

Table 4 Morbidity of children (0-14 years old) with acute and chronic diseases by main disease groups

	2003	2004	2005	2006	2007
Number of registered newly diagnosed cases, thsd. of cases	221,1	237,3	258,3	276,2	273,0
of which:					
Infectious and parasitic diseases	24,1	32,6	31,3	22,2	25,1
Neoplasms	0,1	0,2	0,2	0,1	0,1
Endocrine, nutritional and metabolic diseases	8,0	6,6	7,9	6,4	5,6
Diseases of blood and blood forming organs	3,7	4,8	5,0	4,4	4,9
Mental and behavioural disorders	1,0	1,3	1,6	1,3	1,4
Diseases of the nervous system and sense organs	13,6	15,7	18,6	...	
*Diseases of the nervous system	...	...	...	8,10	6,60
* Diseases of the eye and adnexa	...	...	...	7,40	7,50
* Diseases of the ear and mastoid process	...	...	...	5,90	6,60
Diseases of the circulatory system	1,70	1,60	1,60	1,70	1,20
Diseases of the respiratory system	137,1	139,4	151,5	182,8	169,8
Diseases of the digestive organs	6,8	8,1	12,6	9,6	17,9
Diseases of urogenital system	4,1	4,7	4,9	4,1	3,6
Diseases of the skin and subcutaneous tissue	9,7	10,0	10,7	9,7	10,7
Diseases of musculoskeletal system and connective tissue	0,7	0,8	1,1	0,7	1,7
Congenital malformations	0,9	1,0	0,9	1,1	1,1
Certain conditions originated in the perinatal period	2,3	2,5	2,5	2,0	1,9
Symptoms, signs and incorrectly identified states	1,2	1,3	1,2	2,0	1,3
Injuries and poisonings	6,1	6,9	6,8	6,8	6,3

Source: Ministry of Labour, Health and Social Affairs of Georgia.

*According to the International Classification of Diseases (10th revision), diseases of the nervous system and diseases of the sensory organs were distinguished as independent classes since 2006.

Table 5 Morbidity indicators per 100000 population, Georgia, 2007

	Number of registered cases	Prevalence	Number of new cases	Incidence
Total	1733925	39511.6	767837	17497.0
Certain infectious and parasitic diseases	72122	1643.5	50829	1158.5
Neoplasms	46455	1058.6	7445	169.6
Endocrine, nutritional and metabolic diseases	152366	3472.0	27307	622.2
Diseases of the blood and blood forming organs and certain disorders involving the immune mechanism	19030	433.6	10264	233.9
Mental and behavioural disorders	93296	2126.0	5553	126.5
Diseases of the nervous system	93749	2136.3	26013	592.8
Diseases of the eye and adnexa	86322	1967.0	24573	559.9
Diseases of the ear and mastoid process	27799	633.5	15382	350.5
Diseases of the circulatory system	351468	8009.0	71198	1622.4
Diseases of the respiratory system	351087	8000.3	288793	6380.8
Diseases of the digestive system	216640	4936.6	120659	2749.5
Diseases of the genitourinary system	79233	1805.5	33772	769.6
Pregnancy, childbirth and the puerperium	9837	831.4	7201	608.6
Diseases of skin and subcutaneous tissue	38699	881.8	27034	616.0
Diseases of the musculoskeletal system and connective tissue	48982	1116.2	17108	389.8
Congenital malformations, deformations and chromosomal abnormalities	6185	140.9	1264	28.8
Certain conditions originating in the perinatal period	2769	5792.9	1847	3733.1
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	5568	126.9	2880	65.6
Injury, poisoning and certain other consequences of external causes	32318	736.4	28715	654.3

* statistikuri cnobari 2007, www.ncdc.ge

Table 6 Morbidity indicators in children, rates per 100000 children, Georgia, 2007

	Number of	registered	Prevalence	new cases
		cases	Number of	
Total	368804	48071.4	273032	35588.1
Certain infectious and parasitic diseases	30614	3990.3	25121	3274.4
Neoplasms	513	66.9	111	14.5
Endocrine, nutritional and metabolic diseases	24090	3140.0	5602	730.2
Diseases of the blood and blood forming organs and certain disorders involving the immune mechanism	7975	1039.5	4854	632.7
Mental and behavioural disorders	5606	730.7	1395	181.8
Diseases of the nervous system	22003	2868.0	6555	854.4
Diseases of the eye and adnexa	14340	1869.1	7473	974.1
Diseases of the ear and mastoid process	8570	1117.0	6568	856.1
Diseases of the circulatory system	6456	841.5	1201	156.5
Diseases of the respiratory system	184920	24103.2	169776	22129.3
Diseases of the digestive system	23700	3089.2	17872	2329.5
Diseases of the genitourinary system	5635	734.5	3599	469.1
Pregnancy, childbirth and the puerperium	8	5.7	7	4.9
Diseases of skin and subcutaneous tissue	12948	1687.7	10654	1388.7
Diseases of the musculoskeletal system and connective tissue	3374	439.8	1651	215.2
Congenital malformations, deformations and chromosomal abnormalities	5216	679.9	1142	148.8
Certain conditions originating in the perinatal period	2769	5792.9	1847	3733.1
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	3149	410.4	1325	172.7
Injury, poisoning and certain other consequences of external causes	6918	901.7	6279	818.4

*statistikuri cnobari 2007, www.ncdc.ge

Table 7 Infant morbidity by the main classes of diseases, Georgia, 2007

	Number of new cases	Incidence rate per 1000 children <1
All diseases	64255	1344,2
<i>Including:</i>		
Certain infectious and parasitic diseases	3915	81,9
Neoplasms	26	0,5
Endocrine, nutritional and metabolic diseases	2884	60,3
Diseases of the blood and blood forming organs and certain disorders involving the immune mechanism	2611	54,6
Mental and behavioural disorders	99	2,1
Diseases of the nervous system	3996	83,6
Diseases of the eye and adnexa	2150	45,0
Diseases of the ear and mastoid process	2322	48,6
Diseases of the circulatory system	189	4,0
Diseases of the respiratory system	37186	777,9
Diseases of the digestive system	1988	41,6
Diseases of skin and subcutaneous tissue	1937	40,5
Diseases of the musculoskeletal system and connective tissue	504	10,5
Diseases of the genitourinary system	948	19,8
Certain conditions originating in the perinatal period	1660	34,7
Congenital malformations, deformations and chromosomal abnormalities	705	14,7
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	854	17,9
Injury, poisoning and certain other consequences of external causes	281	5,9

*statistikuri cnobari 2007, www.ncdc.ge

Table 8 Deaths and mortality rates by sex and ages groups, Georgia, 2007

Age groups	Total number of deaths			Mortality rate per 1000 population		
	Both sexes	Male	Female	Both sexes	Male	Female
-1	656	372	284	13.7	14.8	12.6
1-4	56	21	35	0.3	0.2	0.4
5-9	44	24	20	0.2	0.2	0.2
10-14	67	36	31	0.2	0.2	0.2
15-19	143	86	57	0.4	0.5	0.3
20-24	274	183	91	0.8	1.0	0.5
25-29	348	257	91	1.1	1.6	0.6
30-34	447	340	107	1.4	2.2	0.7
35-39	655	488	167	2.2	3.4	1.1
40-44	1040	775	265	3.3	5.3	1.6
45-49	1461	1087	374	4.4	7.0	2.1
50-54	1808	1338	470	6.5	10.4	3.1
55-59	1990	1384	606	8.2	12.6	4.6
60-64	1813	1197	616	12.6	18.8	7.7
65-69	5454	3367	2087	24.5	36.7	16.0
70-74	5919	3187	2732	33.6	44.2	26.2
75-79	7631	3774	3857	56.4	72.6	46.2
80-84	6272	2591	3681	86.0	109.3	74.8
85+	5100	1584	3516	141.3	205.7	123.8
Total	41178	22091	19087	9.4	10.6	8.3

*statistikuri cnobari 2007, www.ncdc.ge

Table 9 Death by the main causes of death, Georgia, 2005 – 2007

	2005		2006		2007	
	Total number	Rate	Total number	Rate	Total number	Rate
Total	40721	933.7	42255	960.8	41178	938.5
Certain infectious and parasitic diseases	314	7.2	241	5.5	285	6.5
Neoplasms	4433	101.6	4830	109.8	4511	102.8
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	66	1.5	0	0.0	8	0.2
Endocrine, nutritional and metabolic diseases	500	11.5	465	10.6	487	11.1
Mental and behavioural disorders	29	0.7	16	0.4	39	0.9
Diseases of the nervous system	278	6.4	289	6.6	265	6.0
Diseases of the eye and adnexa	0	0.0	0	0.0	0	0.0
Diseases of the ear and mastoid process	0	0.0	0	0.0	0	0.0
Diseases of the circulatory system	27492	630.3	28373	645.1	27560	628.0
Diseases of the respiratory system	1020	23.4	1198	27.2	1204	27.4
Diseases of the digestive system	1204	27.6	1147	26.1	1071	24.4
Diseases of skin and subcutaneous tissue	1	0.0	0	0.0	0	0.0
Diseases of the musculoskeletal system and connective tissue	3	0.1	2	0.02	2	0.0
Diseases of the genitourinary system	330	7.6	309	7.0	307	7.0
Pregnancy, childbirth and the puerperiu	10	0.4	11	0.5	2	0.1
Certain conditions originating in the perinatal period	886	20.3	661	15.0	574	13.1
Congenital malformations, deformations and chromosomal abnormalities	29	0.7	59	1.3	65	1.5
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	2888	66.2	3397	77.2	3473	79.1
Injury, poisoning and certain other consequences of external causes	1238	28.4	1257	28.6	1325	30.2

*statistikis departamenti www.statistics.ge

Table 10 Deaths and mortality rates by sex and ages groups, Georgia, 2006

Age groups	Total number of deaths			Mortality rate per 1000 population		
	Both sexes	Male	Female	Both sexes	Male	Female
-1	753	395	358	16.2	16.1	16.3
1-4	57	31	26	0.3	0.3	0.3
5-9	57	36	21	0.2	0.3	0.2
10-14	67	38	29	0.2	0.2	0.2
15-19	129	93	36	0.3	0.5	0.2
20-24	279	207	72	0.8	1.2	0.4
25-29	378	293	85	1.2	1.8	0.5
30-34	523	405	118	1.7	2.7	0.7
35-39	668	513	155	2.2	3.6	1.0
40-44	1061	803	258	3.2	5.3	1.5
45-49	1448	1102	346	4.4	7.3	2.0
50-54	1864	1365	499	6.8	10.8	3.4
55-59	1996	1419	577	8.6	13.5	4.6
60-64	1886	1179	707	13.0	18.6	8.6
65-69	5581	3329	2252	23.7	34.0	16.4
70-74	6091	3414	2677	36.3	49.3	27.2
75-79	7805	3858	3947	57.7	74.6	47.2
80-84	6426	2468	3958	98.7	121.6	88.3
85+	5186	1510	3676	153.0	206.8	138.2
Total	42255	22458	19797	9.6	10.8	8.5

*statistikis departamenti www.statistics.ge

Table 11 Deaths rate dinamic by age and sex 2003-2007

asaki (wlebi)	2003			2004			2005			2006			2007		
	orive sqesi	mamakaci	qali	orive sqesi	mamakaci	qali	orive sqesi	mamakaci	qali	orive sqesi	mamakaci	qali	orive sqesi	mamakaci	qali
-1	1,144	657	487	1,178	636	542	916	482	434	753	395	358	656	372	284
1-4	131	79	52	132	76	56	64	31	33	57	31	26	56	21	35
5-9	35	20	15	88	60	28	64	34	30	57	36	21	44	24	20
10-14	66	28	38	83	52	31	48	25	23	67	38	29	67	36	31
15-19	107	70	37	154	107	47	121	80	41	129	93	36	143	86	57
20-24	212	141	71	241	172	69	256	178	78	279	207	72	274	183	91
25-29	319	195	124	317	234	83	328	239	89	378	293	85	348	257	91
30-34	415	326	89	504	370	134	501	363	138	523	405	118	447	340	107
35-39	550	358	192	679	508	171	665	490	175	668	513	155	655	488	167
40-44	885	558	327	1,090	795	295	1,129	818	311	1,061	803	258	1,040	775	265
45-49	1,246	886	360	1,477	1,067	410	1,419	1,004	415	1,448	1,102	346	1,461	1,087	374
50-54	1,971	1,337	634	1,746	1,217	529	1,746	1,238	508	1,864	1,365	499	1,808	1,338	470
55-59	1,899	1,188	711	1,982	1,335	647	1,962	1,301	661	1,996	1,419	577	1,990	1,384	606
60-64	3,188	1,891	1,297	2,685	1,654	1,031	2,313	1,375	938	1,886	1,179	707	1,813	1,197	616
65-69	5,393	3,204	2,189	5,886	3,336	2,550	4,974	2,860	2,114	5,581	3,329	2,252	5,454	3,367	2,087
70-74	7,115	3,720	3,395	7,136	3,771	3,365	5,651	3,082	2,569	6,091	3,414	2,677	5,919	3,187	2,732
75-79	8,841	3,988	4,853	9,746	4,757	4,989	7,716	3,689	4,027	7,805	3,858	3,947	7,631	3,774	3,857
80-84	5,716	2,146	3,570	6,737	2,480	4,257	5,585	2,168	3,417	6,426	2,468	3,958	6,272	2,591	3,681
85+	6,822	2,037	4,785	6,932	2,015	4,917	5,263	1,634	3,629	5,186	1,510	3,676	5,100	1,584	3,516
s u l	46,055	22,829	23,226	48,793	24,642	24,151	40,721	21,091	19,630	42,255	22,458	19,797	41,178	22,091	19,087

*statistikis departamenti www.statistics.ge

Table 12 Georgian population health condition 2005; Deaths by the main cause of death, Georgia (%)*

	2002	2003	2004	2005
Diseases of the circulatory system	71,6	65,6	62,4	67,5
Neoplasms	10,7	12,3	11,3	10,9
Diseases of the respiratory system	2,6	3,7	8,2	2,5
Diseases of the digestive system	2,8	4,8	3,5	2,96
Other diseases	9,1	10,9	14,6	16,14

*janmrTelobis dacva, statistikuri cnobari, saqarTvelo 2005, www.ncdc.ge

Table 13 Deaths structure by the main cause of death per 100000 population

	Total number of deaths		Mortality rate	
	2004	2005	2004	2005
All diseases	48793	40721	1134,1	933,7
total	48793	40721	1134,1	933,7
Certain infectious and parasitic diseases	399	314	9,3	7,2
Neoplasms	5520	4433	128,3	101,6
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	45	66	0,7	1,5
Endocrine, nutritional and metabolic diseases	850	500	19,8	11,5
Mental and behavioural disorders	49	29	1,1	0,7
Diseases of the nervous system	171	278	4,0	6,4
Diseases of the circulatory system	30455	27492	707,9	630,3
Diseases of the respiratory system	3991	1020	92,8	23,4
Diseases of the digestive system	1708	1204	39,7	27,6
Diseases of the genitourinary system	407	330	9,5	7,6
Pregnancy, childbirth and the puerperiu	21	10	0,5	0,4
Diseases of skin and subcutaneous tissue	6	1	0,1	0,0
Diseases of the musculoskeletal system and connective tissue	18	3	1,5	0,7
Congenital malformations, deformations and chromosomal abnormalities	63	29	1,5	0,7
Certain conditions originating in the perinatal period	859	886	20,0	20,3
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	2317	2888	53,9	66,2
Injury, poisoning and certain other consequences of external causes	1914	1238	44,5	28,4

*janmrTelobis dacva, statistikuri cnobari, saqarTvelo 2005, www.ncdc.ge

Table 14 Diseases of the circulatory system, morbidity rates, Georgia, 2001– 2007

	2001	2002	2003	2004	2005	2006	2007
Prevalence	4870.6	5322.4	5776.8	6494,8	7228.3	7720.8	8009.0
Incidence	1306.1	1299.6	1481.7	1616,1	1888.0	1891.0	1622.4
<i>Including:</i>							
Rheumatic diseases							
<i>Prevalence</i>	343.5	356.3	358.8	350,6	378.8	471.2	455.8
<i>Incidence</i>	73.8	73.6	68.9	76,0	82.7	100.0	87.4
Hypertensive diseases							
<i>Prevalence</i>	2173.4	2410.4	2730.6	3108,2	3620.5	3861.5	4142.9
<i>Incidence</i>	539.2	569.9	686.4	801,9	950.7	917.4	803.5
Ischemic heart diseases							
<i>Prevalence</i>	1613.3	1760.8	1875.7	1955,1	2213.2	2373.2	2239.8
<i>Incidence</i>	435.9	400.1	441.0	449,8	545.7	569.9	427.5
Cerebrovascular diseases							
<i>Prevalence</i>	217.6	235.6	244.2	289,9	344.7	345.5	344.1
<i>Incidence</i>	88.0	82.8	91.3	107,8	111.3	116.9	88.2

*statistikuri cnobari 2007, www.ncdc.ge

Table 15 Arterial hypertension and Ischemic heart diseases in screened population

regions	hypertension of arteries		Ischemic heart diseases	
	Organized population	Unorganized population	Organized population	Unorganized population
Tbilisi	45%	30%	16%	13%
vani		46%		17%
senaki		29%		12%
kaspi	38%		14%	
tsageri		43%		23%
oni		37%		12%
akhmeta		42%		25%
gori	39%	35%		
Cokhatauri	37%		12%	
poti	32%		13%	
bolnisi	39%		12%	

Table 16 Endocrine, nutritional and metabolic diseases, Georgia, 2007

	All ages		In children		All ages		In children	
	Number of patients enrolled by the end of the year	Prevalence 10000 population	Number of patients enrolled by the end of the year	Prevalence 10000 population	New cases	Incidence per 100000 population	New cases	Incidence per 100000 population
All diseases	118812	2707.4	10392	1354.5	27307	622.3	5602	730.2
<i>Including:</i>								
Sub clinical iodine-deficiency hypothyroidism and other hypothyroidism	27530	627.3	7369	960.5	8239	187.7	2814	366.8
Other non-toxic goitre	11824	269.4	845	110.1	5887	134.1	1329	173.2
Thyrotoxicosis	5871	133.8	280	36.5	1761	40.1	107	13.9
Diabetes mellitus non-insulindependent	16686	380.2	208	27.1	2415	55.0	59	7.7
Diabetes mellitus insulindependent	43189	984.2	55	7.2	5046	115.0	10	1.3

*statistikuri cnobari 2007, www.ncdc.ge

Table 17 Thyroid gland screening, Georgia, 2005 - 2007

	2005		2006		2007	
	Total number	%	Total number	%	Total number	%
Screened patients	59442	100	54393	100	43413	100
Total number of thyroid gland hyperplasia	27570	46.4	28859	53.0	25690	59.2
Treatment prescribed	21496	78.0	23497	81.4	21242	82.7
Including children	28070	100	19491	100	14535	100
Total number of thyroid gland hyperplasia	12059	43.0	8630	44.3	7333	50.4
Treatment prescribed	8129	67.4	6488	75.2	4820	65.7

*statistikuri cnobari 2007, www.ncdc.ge

Table 18 Thyroid gland screening results by the regions (survey data), Georgia, 2006 – 2007

	2006			2007		
	Number of patients screened by health facilities (all ages)	Including thyroid gland hyperplasia revealed	Thyroid gland hyperplasia revealed in %	Number of patients screened by health facilities (all ages)	Including thyroid gland hyperplasia revealed	Thyroid gland hyperplasia revealed in %
Tbilisi	7615	5130	67.4	3812	2756	72.3
Adjara	4238	1057	50.0	2305	1905	82.6
gurja	897	598	66.7	791	640	80.9
Racha-Lechkhumi	414	241	58.2	374	129	34.5
Samegrelo	7101	4027	56.7	6567	3435	52.3
ImereTi	16132	8845	54.8	15268	8597	56.3
Kakheti	4727	2475	52.3	3787	2160	57.0
Mtskheta-Mtianeti	2523	776	30.7	1964	661	33.6
Samtskhe-Javakhet	1397	700	50.1	1175	989	84.2
Kvemo Kartli	356	294	82.6	301	195	64.8
Shida Kartli	2670	1797	67.3	4546	3519	77.4
Abkhazia	6185	1763	28.5	2391	572	23.9
Departments other than the MOLHSA	138	94	68.1	132	132	100.0
Georgia	54393	28859	53.0	43413	25690	59.2

Table 19 Thyroid gland screening in children, results by the regions (survey data), Georgia, 2006 – 07

	2006			2007		
	Number of patients screened by health facilities (all ages)	Including thyroid gland hyperplasia revealed	Thyroid gland hyperplasia revealed in %	Number of patients screened by health facilities (all ages)	Including thyroid gland hyperplasia revealed	Thyroid gland hyperplasia revealed in %
Tbilisi	903	407	45.1	319	225	70.5
Adjara	2115	1057	50.0	744	315	42.3
guria	682	442	64.8	464	353	76.1
Racha-Lechkumi	129	90	69.8	110	23	20.9
Samegrelo	1771	850	48.0	1570	769	49.0
ImereTi	5404	2865	51.2	3546	2199	62.0
Kakheti	2622	1449	55.3	2089	1163	55.7
Mtskheta-Mtianeti	1399	388	29.6	1485	408	27.5
Samtskhe-Javakhet	432	207	47.9	704	602	85.5
Kvemo Kartli	82	78	95.1	85	43	50.6
Shida Kartli	972	596	64.8	1519	1141	75.1
Abkhazia	2980	301	10.1	1900	92	4.8
Georgia	19491	8630	44.3	14535	7333	50.4

Table 20 Diseases of the respiratory systems, morbidity rates, Georgia, 2007 www.ncdc.ge

	All ages				In children			
	Total number of registered cases	Prevalence	Total number of new cases	Incidence	Total number of registered cases	Prevalence	Total number of new cases	Incidence
Diseases of the respiratory system	351087	8000,3	288793	6580,8	184920	24103,2	169776	22129,3
<i>Including:</i>								
Acute upper respiratory infections	192622	4389,3	188564	4296,9	124068	16171,5	122565	15975,6
Pneumonia	20807	474,1	19660	448,0	7681	1001,2	7118	927,8
Other lower respiratory infections	34138	777,9	32922	750,2	17449	2274,4	17021	2218,6
Other diseases of upper respiratory tract	43027	980,5	23725	540,6	21588	2813,9	13635	1777,2
Including allergic rhinitis	7784	177,4	3653	83,2	2429	316,6	1372	178,8
Chronic lower respiratory diseases	41568	947,2	11646	265,4	6072	791,4	2517	328,1
Including:								
Chronic and not specified bronchitis	18530	422,2	6085	138,7	2720	354,5	1428	186,1
Emphysema	942	21,5	309	7,0	36	4,7	9	1,2
Asthma and status asthmaticus	16448	374,8	3114	71,0	2417	315,0	618	80,5
Other chronic obstructive pulmonary disease	3671	83,6	1312	29,9	369	48,1	153	19,9
Bronchoectasis	277	6,3	114	2,6	15	2,0	7	0,9
Lung diseases due to external agents	397	9,0	98	2,2	33	4,3	6	0,8
Other respiratory diseases principally affecting the interstitium	674	15,4	204	4,6	73	9,5	37	4,8
Suppurative and necrotic conditions of lower respiratory tract	75	1,7	31	0,7	9	1,2	2	0,3
Other diseases of the respiratory system	4288	97,7	2604	59,3	1118	145,7	726	94,6

Table 21 Injury, poisoning and certain other consequences of external causes, incidence rates and case distribution, Georgia, 2007

	All ages			In children		
	New cases	Incidence	%	New cases	Incidence	%
Injury, poisoning and certain other consequences of external causes	28715	654,3	100	6279	818,4	100
<i>Including:</i>						
Fracture of skull and facial bones, neck, ribs, sternum and spine	971	22,1	3,4	224	29,2	3,6
Intarcranial injury	489	11,1	1,7	97	12,6	1,5
Injuries to upper and lower limbs	3602	82,1	12,5	681	88,8	10,8
Dislocation, sprain and strain of joints and ligaments	3649	83,2	12,7	796	103,8	12,7
Injuries to the thorax, intra-abdominal and pelvic organs	1041	23,7	3,6	589	76,8	9,4
Wounds, injuries of blood vessels, superficial injuries	15961	363,7	55,6	3146	410,1	50,1
Injuries of nerves and spinal cord	168	3,8	0,6	40	5,2	0,6
Burns and corrosions	917	20,9	3,2	243	31,7	3,9
Poisoning by drugs, medicaments and biological substances, toxic effects of substances chiefly nonmedical as to source`	728	16,6	2,5	130	16,9	2,1
<i>Including:</i> Poisoning by drugs, medicaments and biological substances	226	5,1	0,8	52	6,8	0,8
toxic effects of substances chiefly nonmedical as to source	177	4,0	0,6	20	2,6	0,3

*statistikuri cnobari 2007, www.ncdc.ge

Table 22 Injury, poisoning and certain other consequences of external causes, morbidity rates by the regions, Georgia, 2006 - 2007

	2006				2007			
	Total number of registered cases	Prevalence	Total number of new cases	Incidence	Total number of registered cases	Prevalence	Total number of new cases	Incidence
Ajara	2066	546,6	1656	438,1	3303	870,4	2754	725,7
Tbilisi	4922	446,6	4318	391,8	4042	364,6	2920	263,4
Kakheti	3355	830,0	3064	758,0	2935	728,8	2527	627,5
Imereti	5250	751,2	5113	731,6	5454	783,7	5251	754,6
Samegrelo	2189	463,5	2080	440,4	2958	631,0	2797	596,6
Shida Kartli	4526	1442,3	3883	1237,4	3468	1107,3	3132	1000,0
Kvemo Kartli	1540	303,1	1408	277,2	2402	476,5	2299	456,1
Guria	1961	1409,8	1902	1367,4	1716	1235,4	1683	1211,7
Samtskhe-Javakhet	1555	746,2	1376	660,3	1839	884,1	1612	775,0
Mtskheta-Mtianeti	1284	1033,0	1173	943,7	1295	1093,8	1097	926,5
Racha-Lechkhumi	628	1286,9	606	1241,8	850	1756,2	836	1727,3
Georgia	32892	747,9	29697	675,2	32318	736,4	28715	654,3

Table 23 Injury, poisoning and certain other consequences of external causes in children, morbidity rates by the regions, Georgia, 2006 - 2007

	2006				2007			
	Total number of registered cases	Prevalence	Total number of new cases	Incidence	Total number of registered cases	Prevalence	Total number of new cases	Incidence
Ajara	489	716,3	424	621,1	1607	2422,0	1323	1994,0
Tbilisi	1236	620,9	1205	605,3	805	415,4	731	377,2
Kakheti	850	1164,4	804	1101,4	595	845,2	577	819,6
Imereti	1229	973,7	1186	939,6	1217	1000,3	1192	979,8
Samegrelo	365	427,9	352	412,7	485	591,8	451	550,3
Shida Kartli	959	1692,3	912	1609,3	448	818,1	420	767,0
Kvemo Kartli	320	348,8	315	343,4	357	405,1	325	368,8
Guria	681	2711,0	665	2647,3	481	1981,1	474	1952,2
Samtskhe-Javakhet	353	937,8	316	839,5	359	987,3	323	888,3
Mtskheta-Mtianeti	344	1532,3	324	1443,2	282	1362,3	229	1106,3
Racha-Lechkhumi	63	715,1	63	715,1	81	957,4	78	922,0
Georgia	7174	903,0	6808	856,9	6918	901,7	6279	818,4

*statistikuri cnobari 2007, www.ncdc.ge

Table 24 Injury, poisoning and certain other consequences of external causes, hospital discharges and case fatality rates, Georgia, 2006- 2007

	2006				2007			
	All ages		Including children		All ages		Including children	
	Number of hospital discharges	Case fatality rate %	Number of hospital discharges	Case fatality rate %	Number of hospital discharges	Case fatality rate %	Number of hospital discharges	Case fatality rate %
Injury, poisoning and certain other consequences of external causes	21041	2,8	2894	0,9	22669	2,5	3061	0,4
<i>Including:</i>								
Fractures	6426	1,9	745	0,8	6295	2,2	819	0,5
Burns and corrosions	651	8,1	255	1,6	502	10,0	234	0
Poisoning by drugs, medicaments and biological substances	2380	1,0	333	0,3	1708	0,7	258	0
Toxic effects of substances chiefly nonmedical as to source	1793	1,1	190	0,5	1891	1,0	157	0

*statistikuri cnobari 2007, www.ncdc.ge

Table 25 Blood cholesterol, RFS, Georgia, 2006-2007

indicator	Male			Female			all		
	%	Mean	St Dev	%	Mean	St Dev	%	Mean	St Dev
primary indicators									
• Mean and standard deviation of total cholesterol concentration		218.4 (5.7)	56.3 (1.5)		233.6 (6.1)	62.3 (1.6)		227.8 (5.9)	60.5 (1.6)
• Prevalence of elevated serum total cholesterol \geq 190 mg/dl (5.0 mmol/l)	66.8			75.5			72.1		
• Awareness of hypercholesterolemia	7.7			5.9			6.5		
• Proportion of population with cholesterol measurement in the past 5 years	13.3			11.3			12.2		
Secondary indicators									
• Prevalence of serum total cholesterol \geq 175 mg/dl (4.5 mmol/l)	77.6			83.6			81.2		
• Proportion of the population with cholesterol measurement in the past year	10.1			7.2			8.6		

Table 26 Blood glucose, RFS, Georgia, 2006-2007

indicator	Male			Female			all		
	%	Mean	St Dev	%	Mean	St Dev	%	Mean	St Dev
primary indicators									
• Mean and standard deviation of total cholesterol concentration- mg/dl (mmol/l)		109.8 (6.1)	28.3 (6.0)		108.1 (1.6)	39.6 (2.2)		108.8 (6.0)	35.7 (2.0)
• Prevalence of impaired fasting glycemia - at least 6.1 mmol/l (110 mg/dl) but less than 7.0 mmol/l (126 mg/dl)	16.1			12.9			14.2		
• Prevalence of provisional diagnosis of diabetes 7.0 mmol/l (126 mg/dl)	13.6			11.2			12.1		
• Proportion of population with glucose measurement in the past 12 month	16.3			17.3			17.8		
• Awareness of elevated serum glucose 6.1 mmol/l (110 mg/dl)	19.7			17.2			18.3		
Secondary indicators									
• Proportion of population with glucose measurement in the past 3 years	22.2			27.6			25.0		

Table 27 Anthropometry measurements, RFS, Georgia, 2006-2007

indicator	Male			Female			all		
	%	Mean	St Dev	%	Mean	St Dev	%	Mean	St Dev
primary indicators									
• Mean and standard deviation of BMI		27.6	4.75		27.6	6.13		27.6	5.50
• Prevalence of obesity (BMI ≥ 30)	27.1			31.6			29.4		
• Mean and standard deviation of waist circumference		99.3	13.71		90.2	15.09		94.6	15.13
Secondary indicators									
• Mean and standard deviation of waist/hip ratio		0.94	0.09		0.83	0.09		0.89	0.11
• Prevalence of waist/hip ratio > 0.95 for men and > 0.80 for women	39.8			60.7			50.5		
• Mean and standard deviation of height		177.3	6.96		164.3	6.21		170.6	9.26
• Mean and standard deviation of weight		86.9	16.00		74.3	16.13		80.4	17.26
<i>Prevalence of categories of BMI:</i>									
• Thin < 18.5	0.8			2.6			1.7		
• Normal range 18.5-24.9	31.9			36.0			34.0		
• Grade 1 overweight 25-29.9	40.2			29.8			34.9		
• Grade 2 overweight 30-39.9	25.7			27.9			26.8		
• Grade 3 overweight > 40	1.4			3.7			2.6		

Table 28 Georgian Population in thousands, 2002-2008

	2002	2003	2004	2005	2006	2007	2008
Number of population at the beginig of year	4371.5	4342.6	4315.2	4321.5	4401.3	4394.7	4382.1
Number of live births	46605	46194	49572	46512	47795	49287	...
Number of deaths	46446	46055	48793	42984	42255	41178	...

Table 29 Main demographic indicators, Georgia, 2006 – 2007

	2006		2007	
	Total number	Indicator	Total number	Indicator
Number of live births (<i>rate per 1000 population</i>)	47795	10.9	49287	11,2
Population natural growth (<i>rate per 1000 population</i>)	5540	1.3	8109	1,8
Number of deaths (<i>rate per 1000 population</i>)	42255	9.6	41178	9,4
Including Infant mortality (<i>rate per 1000 live births</i>)	753	15.8	656	13,3
Number of stillbirths (<i>rate per 1000 births</i>)	712	14.7	632	12,7

Table 30 Age specific fertility rate and population reproduction gross and net rates, Georgia, 1990 – 2007

Years	All ages (15-49)	Age of Mother							Total fertility rate	Reproduction rate	
		- 20	20-24	25-29	30-34	35-39	40-44	45 +		Gross	Net
1990	67.8	58.1	167.3	110.5	64.0	24.7	6.2	0.3	2.16	1.046	1.015
1995	46.0	64.2	113.3	66.4	41.9	16.6	4.2	0.7	1.54	0.725	0.700
2000	41.7	39.9	110.1	74.4	43.3	19.2	4.9	0.9	1.46	0.694	0.675
2001	40.9	32.5	112.3	71.1	45.2	21.0	5.4	1.4	1.44	0.684	0.665
2002	40.2	32.8	108.6	63.5	50.2	21.2	6.4	1.5	1.42	0.673	0.653
2003	40.0	33.2	99.4	78.8	46.8	19.0	5.2	0.5	1.41	0.665	0.645
2004	42.8	35.1	109.3	83.3	47.2	21.1	5.4	1.0	1.51	0.718	0.695
2005	39.6	38.5	97.2	75.2	44.0	18.6	4.2	0.5	1.39	0.654	0.634
2006	40.2	36.7	100.7	76.0	43.3	18.9	4.6	0.7	1.40	0.663	0.648
2007	41,7	36,3	103,1	79,2	46,5	19,7	4,4	0,5	1,45	0,688	0,674

wyaro: statistikis departamenti mosaxleoba – www.statistics.ge

Table 31 Deaths and mortality rates by sex and ages groups, Georgia, 2007

Age groups	Total number of deaths			Mortality rate (per 1000 population)		
	Both sexes	Male	Female	Both sexes	Male	Female
-1	656	372	284	13.7	14.8	12.6
1-4	56	21	35	0.3	0.2	0.4
5-9	44	24	20	0.2	0.2	0.2
10-14	67	36	31	0.2	0.2	0.2
15-19	143	86	57	0.4	0.5	0.3
20-24	274	183	91	0.8	1.0	0.5
25-29	348	257	91	1.1	1.6	0.6
30-34	447	340	107	1.4	2.2	0.7
35-39	655	488	167	2.2	3.4	1.1
40-44	1040	775	265	3.3	5.3	1.6
45-49	1461	1087	374	4.4	7.0	2.1
50-54	1808	1338	470	6.5	10.4	3.1
55-59	1990	1384	606	8.2	12.6	4.6
60-64	1813	1197	616	12.6	18.8	7.7
65-69	5454	3367	2087	24.5	36.7	16.0
70-74	5919	3187	2732	33.6	44.2	26.2
75-79	7631	3774	3857	56.4	72.6	46.2
80-84	6272	2591	3681	86.0	109.3	74.8
85+	5100	1584	3516	141.3	205.7	123.8
Total	41178	22091	19087	9.4	10.6	8.3

wyaro: statistikis departamenti mosaxleoba – www.statistics.ge

Table 32 Life expectancy at birth, Georgia, 1990 – 2007

	1990	1995	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total	71,4	70,3	71,4	71,3	71,6	71,5	72,1	71,6	74,0	74,3	75,1
Male	67,5	66,3	67,5	67,5	68,1	68,0	68,7	67,9	70,0	69,8	70,5
Female	75,0	74,2	75,1	75,0	74,9	74,9	75,3	75,1	77,6	78,6	79,4

wyaro: statistikis departamenti mosaxleoba – www.statistics.ge

Table 33 Ambulatory Services State Program’s budget allocations, 2007

Ambulatory Services State Program	Budget, 2007	GEL (thousands)
General ambulatory services	(2100 PHC teams in th country)	22.200
	Family medicine model establishment	4.500
	Budgeting of 21 ambulatories	1.500
	Ambulatory services existing network	14.700
	Program management	300
	Medicaments	1.200
Specialized ambulatory services		5950
	Psyciatric services	2050
	Physiological services	1200
	Pregnant care	2240
	Recruits medical examination	300
	Total	28.150

(martina pelni 2006 w. dekemberi, GVG-s eqsperti)

Table 34 Number of encounters with ambulatories in the rural population, Georgia, 2005 - 2007

Regions	2005		2006		2007	
	Total number of encounters	Number of encounters per person per year	Total number of encounters	Number of encounters per person per year	Total number of encounters	Number of encounters per person per year
Ajara	174943	0.8	153513	0.7	199520	0,9
Guria	153630	1.5	186489	1.8	135381	1,3
Racha-Lechkhumi and Kvemo Svaneti	33211	0,8	29360	0.7	25879	0,7
Samegrelo and Zemo Svaneti	272165	1,0	284413	1.0	220427	0,8
Imereti	408431	1,1	465485	1.3	424646	1,1
Kakheti	354342	1,1	401935	1.2	308865	1,0
Mtskheta-Mtianeti	73376	0,8	92572	1.0	81709	0,9
Samtskhe-Javakheti	135616	1,0	105670	0.7	142357	1,0
Kvemo Kartli	139576	0,4	139680	0.4	122636	0,4
Shida Kartli	153528	0,8	224956	1.1	178133	0,9

janmrTelobis dacva, saqarTvelo, 2007

Table 35 Chronic diseases morbidity and treatment; household surveys 2001 & 2007

Quantile	2001		2007	
	Population %, who reports being ill	Population %, who tries to get medical services	Population %, who reports being ill	Population %, who tries to get medical services
Poorest	12.2	42.9	34.1	52.3
2	11.8	49.5	37.0	55.4
3	11.8	51.1	37.3	56.5
4	12.5	61.1	38.0	59.7
Reachest	13.3	62.2	38.6	64.0
Total	12.3	53.3	37.0	57.7

Appendix 2

Working group:

Bejhan Tsinamdzyrshvili, MD PhD – Head of the WG; Director of the Institute of Cardiology, President of the Georgian Hypertension Society

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Marina Baidauri, MD – Healthcare Regulation Department; Ministry of Labor, Health and Social Affairs

Marina Pherashvili, MD - Institute of Cardiology, Georgian Hypertension Society

Revaz Tataradze, MD PhD – CINDI Georgia; ACTS Georgia

Appendix 3

Informant organizations:

1. Ministry of Labor, Health and Social Affairs
2. Parliament of Georgia
3. National Center for Disease Control and Public Health
4. Health and Social Projects Implementation Center
5. Municipality of Tbilisi
6. I. Javakhishvili State University
7. Tbilisi State Medical University
8. Institute of Cardiology
9. National Center of Therapy
10. National Center of Oncology
11. Institute of Neurology
12. Institute of Sanitary and Hygiene
13. Health and Social Programs Agency
14. Association of Cardiologists
15. Association of Endocrinologists
16. Atherosclerosis Association
17. Obesity Association
18. Respiratory Diseases Association
19. Diabetes Federation
20. Association of children with diabetes
21. Association of Family Doctors
22. Family Doctors Professional Union
23. NGO 'Family Medicine National Learning Center'
24. Association of Internists
25. Georgian Alliance of Patients Safety
26. Eurasia Foundation
27. International Fund 'Curatio'
28. USAID
29. OPM
30. UNFPA
31. UNICEF
32. AIHA
33. Co-Reform
34. ACTS Georgia
35. CINDI Georgia
36. WB
37. JSI

Appendix 4

Questionnaire 1

1. What is the most reliable tool for non-communicable diseases registration in Georgia?
2. In the circumstances of healthcare reform which is the most important factor for patient's admission in primary healthcare facilities?
3. What's the main weakness of non-communicable diseases management in the country?
4. What should the medical services be oriented on for the non-communicable diseases better management in PHC facilities?
5. What's the main weakness of primary healthcare doctors?
6. What's the main weakness of the primary healthcare system?
7. What's the main weakness of patients?
8. What should be the priorities for intervention?
9. What is the conception non-communicable disease preventive politic is based on in Georgia?
10. How are laws, decrees, and regulations elaborated?
11. Who participates in policy ganxorcielebaSi?
12. What happened with Public Health programs, what are the future plans?
13. What capacity and experts of which spheres are necessary for non-communicable diseases better prevention and management in Georgia?
14. Which stakeholders are necessary to be included in non-communicable diseases prevention and management?
15. Which resources are necessary for effective non-communicable diseases prevention and management?
16. What are the barriers regarding non-communicable diseases prevention and management in Georgia?

Questionnaire 2:

1. What is the most reliable tool for the non-communicable diseases registration in Georgia?
2. What is the share of fraction of non-communicable diseases in total health expenditure?
3. In the circumstances of healthcare reform which is the most important factor for patient's admission in primary healthcare facilities?
4. What's the main weakness of non-communicable diseases management in the country?
5. What should the medical services be oriented on for the non-communicable diseases better management in PHC facilities?
6. What is the conception non-communicable disease preventive politic is based on in Georgia?
7. Who participates in policy ganxorcielebaSi?
8. How are laws, decrees, and regulations elaborated?
9. What are the main factors of non-communicable diseases as the main public health threats?
10. Is diseases burden calculated in Georgia? If yes what is the share of non-communicable diseases?

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