

**МИНИСТЕРСТВО ЗДРАВООХРАНЕНИЯ РЕСПУБЛИКИ БЕЛАРУСЬ**  
**УЧРЕЖДЕНИЕ ОБРАЗОВАНИЯ**  
**«ГОМЕЛЬСКИЙ ГОСУДАРСТВЕННЫЙ МЕДИЦИНСКИЙ УНИВЕРСИТЕТ»**

**Кафедра общественного здоровья и здравоохранения**

**Т. М. ШАРШАКОВА, А. Н. БАРАШ**

**КУРС ЛЕКЦИЙ ПО ДИСЦИПЛИНЕ**  
**«ОБЩЕСТВЕННОЕ ЗДОРОВЬЕ**  
**И ЗДРАВООХРАНЕНИЕ»**

**Учебно-методическое пособие**  
**для студентов 4–6 курсов**  
**факультета по подготовке специалистов для зарубежных стран**  
**медицинских вузов**

**COURSE OF LECTURES**  
**«PUBLIC HEALTH AND HEALTH CARE»**

**Teaching workbook**  
**for 4–6<sup>th</sup> year students**  
**of the Faculty on preparation of experts for foreign countries**  
**of medical higher educational institutions**

**Гомель**  
**ГомГМУ**  
**2017**

УДК 614.2 (072)(042.3)=111

ББК 51я73

Ш 26

**Рецензенты:**

доктор медицинских наук, доцент,  
заведующий кафедрой общественного здоровья и здравоохранения  
Гродненского государственного медицинского университета

***М. Ю. Сурмач;***

кандидат медицинских наук, доцент,  
заведующий кафедрой общественного здоровья и здравоохранения  
Белорусского государственного медицинского университета

***Т. П. Павлович;***

кандидат медицинских наук, доцент,  
директор Института радиобиологии Национальной академии наук Беларуси

***И. А. Чешик***

**Шаршакова, Т. М.**

Ш 26 Курс лекций по дисциплине «Общественное здоровье и здравоохранение»: учеб.-метод. пособие для студентов 4–6 курсов факультета по подготовке специалистов для зарубежных стран медицинских вузов = Course of lectures «Public health and health care»: teaching workbook for 4–6<sup>th</sup> year students of the Faculty on preparation of experts for foreign countries of medical higher educational institutions / Т. М. Шаршакова, А. Н. Бараш. — Гомель: ГомГМУ, 2017. — 80 с.

ISBN 978-985-506-978-3

Учебно-методическое пособие содержит современные материалы по общественному здоровью и здравоохранению. Соответствует учебному плану и типовой учебной программе по дисциплине «Общественное здоровье и здравоохранение», утвержденной Министерством здравоохранения Республики Беларусь.

Предназначено для студентов 4–6 курсов факультета по подготовке специалистов для зарубежных стран медицинских вузов.

Утверждено и рекомендовано к изданию научно-методическим советом учреждения образования «Гомельский государственный медицинский университет» 13 июня 2017 г., протокол № 5.

УДК 614.2(072)(042.3)=111

ББК 51я73

ISBN 978-985-506-978-3

© Учреждение образования  
«Гомельский государственный  
медицинский университет», 2017

# CONTENTS

A list of abbreviations .....	4
Lecture 1. Public health and health care services as a science and a subject of teaching .....	5
Lecture 2. Public health and health care services. The systems of public health care services. International cooperation in public health area .....	10
Lecture 3. Medical statistics and its methodological features .....	29
Lecture 4. Demography. Basic concepts and methodology of studying. Features and tendencies of modern demographic processes .....	34
Lecture 5. Types of health care services .....	42
Lecture 6. Morbidity and disability of the population .....	57
Lecture 7. Management of public health .....	62
Lecture 8. Economy of public health. Planning and financing of health care .....	65
Literature .....	76

## A LIST OF ABBREVIATIONS

CVD	— cardiovascular disease
EMA	— emergency medical aid
FAO	— food and agriculture Organization
GDP	— gross domestic product
HEMA	— hospital of emergency medical aid
ICD	— international classification of disease
IASP	— international association for suicide prevention
IARC	— international agency for research on cancer
IASP	— international association for the study of pain
ICRC	— international committee of the Red Cross
ILO	— international labour organization
IHR	— international health regulations
MCC	— medical-consulting commissions
MREC	— medical rehabilitation expert commissions
NCDs	— non-communicable diseases
UNICEF	— United Nations Children's Fund
WGO	— world gastroenterology organization
WHO	— World Health Organization
WPA	— world psychiatric association

# LECTURE 1

## PUBLIC HEALTH AND HEALTH CARE SERVICES AS A SCIENCE ANDA SUBJECT OF TEACHING

### *Questions:*

1. Public health and public health services, definition, subject and object of studying.
2. The indices of public health estimation.
3. The main tasks of public health and public health services.
4. The structure of science.
5. The actual problem of public health and public health services.
6. The basic methods of social and hygienic researches.

### **1. Public health and public health services, definition, subject and object of studying.**

Public health and public health services.

This science is about public health services system. Public health services — is the system of

the scientifically-grounded social and economic and medical, state and public actions and the organizations on health protection.

It should provide the prevention and treatment of illness, creation of favorable hygienic working and life conditions, the maximal working capacity and active longevity of citizens.

Public health- is health of population caused by complex influence of social factors, biological factors, environmental factors, estimated by demographic indices, indicators of physical development, morbidity and disability .

Object of studying is not the certain person, it is a collective, social group, society in general, and also the health system.

Subject of studying is health of population in general, isolated collectives, social groups depending on conditions of habitats (external environment, social environment), and also a complex of the concrete actions directed to his strengthening.

Indicators of public health (WHO)

1. Gross of national product on health care;
2. Availability of primary health care;
3. Coverage of the population of medical care;
4. Level of immunization of the population;
5. Extent of inspection pregnant with qualified medical staff;
6. Children's access to healthy food;
7. Level of infantile mortality;
8. Life expectancy
9. Hygienic literacy of the population.

Health is a state of complete physical, mental, and social well-being and not merely the absence of disease and infirmity.

(The World Health Organization)

The health of the nation is medical and demographic and social categories reflecting physical, mental, social well-being of the people who are carrying out the activity within certain social communities.

Public health (public health as a resource) is the medical and social resource and capacity of society promoting ensuring national security.

Health assessment levels

Individual health — health of the person;

Group health — health of social and ethnic groups;

Regional health — health of the population of administrative territories;

Public health — health of population.

Indices of an estimation of individual health:

— Health resources

— Health potential

— Balance of health

Health resources are discrete and psychological opportunities of an organism to change balance of health to a positive side.

Potential of health is a set of abilities of an individual to react adequately to influence of external factors.

Adequacy of reactions is defined by condition of compensatory and adaptive systems (nervous, endocrine, etc.) and the mechanism of mental self-control (psychological protection, etc.).

Balance of health

The expressed equilibrium state between the potential of health and factors operating on him.

## **2. The indices of public health estimation**

The indices of public health estimation

Risk factors and criteria for estimation of public health.

— medical and demographic indexes

— birth rate

— mortality

— natural increase

— infantile mortality

— fertility coefficient

— life expectancy

— morbidity

— primary morbidity

Indices of disability of the population

— levels of the general and primary disability,

— special indicators of disability,

— structure of the reasons of disability, etc.

Indices of physical development

— anthropometrical (body weight, growth, chest circumference, head circumference, etc.);

— physiometric (respiration rate, pulse, arterial pressure, etc.);

— somatic (constitution, turgor).

Statistical data about health is a basis for state and regional planning of improving actions upon health. Developments of organizational methods of work for healthcare organizations.

The factors determining the level of public health:

— Quality of medical care

— Portion of influence on the level of public health — 10 %

— Portion of influence on mortality rate — 38,5 %

Biological factors:

Sex

Age

Genetic:

— physical parameters

— resistance to diseases

— susceptibility to diseases

— genetic diseases

— general stability

— endurance

Environment

1. Macro-components:

— Food

— Water

— Air

2. Micro-components:

— Housing

— Work place

Definition and classification of risk factors

Risk factors are potentially dangerous for health, these factors could be behavioural, biological, genetic, ecological, social character, environmental, increase the probability of diseases and failure.

Social economic factors (conditions of work, housing, a material welfare, etc.).

Social biological factors (age, sex, etc.).

Ecological and environmental factors (pollution, average annual temperature, level of solar radiation, etc.).

Organizational and medical factors (quality of medical help, availability of medical and social help, etc.).

The second part of a subject and science is health care. It develops evidence-based, optimal methods of management of health care, new forms and methods of work of various medical establishments, ways of improvement of quality of medical care, economic and administrative problems in health care.

Priority of values of quality of a health system (WHO)

- Safety
- Efficiency
- Orientation to the patient
- Timelines
- Economic efficiency
- Justice

### **3. Main tasks of public health and public health services**

Tasks of public health and health care are:

- Studying of the state of health of the population and influence of social factors on it.
- Development of methodology of studying of health of the population.
- Theoretical justification of policy of state in the field of health care.
- Development of organizational principles of health care in the country.
- Development and practical realization of organizational forms and methods of work of medical organizations and doctors.
- Preparation and education of medical staff, as social activists doctors, organizers of work on the specialty.

### **4. The structure of science**

1. History of public health and health care systems.
2. Theoretical problems of health care and medicine. Conditions and life style of the population.
3. Health of population and methods of its studying.
4. Medical statistics.
5. Organization of medical care for population.
6. Economy, planning, financing of health care.
7. Management of health care.
8. Public health care abroad. WHO's activities.

### **5. The actual problem of public health and public health services**

Relevant problems of public health and health care.

1. Studying of theoretical and organizational fundamentals of public health.
2. Studying of influence of social conditions and a life style on health of the population.
3. Development of criteria for evaluation of public health.
4. Research of problems of the population and their communications with public health and health care.



5. Studying of person's ecology.
6. Research of medical, social and economic importance of public health and elaboration of ways of its development.
7. Studying of legal and ethical fundamentals of health care.
8. Studying of needs of the population of medical care provided in out-patient and stationary conditions and elaboration of the most effective forms and methods of their satisfaction.
9. Elaboration of comprehensive programs of decrease and elimination of the most widespread and serious illnesses.
10. Elaboration of questions of planning and management of health care.
11. Elaboration of questions of economy of public health.
12. Elaboration of sanitary and epidemiologic fundamentals of public health.
13. Elaboration of social and economic and medical actions of prevention.
14. Elaboration of actions upon promotion and realization of healthy life style, hygienic education of the population.

The department of public health and health care promotes formation of the identity of the doctor, teaches to resolve difficult questions of protection and protection of people's health, forms creative thinking.

## **6. The basic methods of social and hygienic researches**

The basic methods of social and hygienic researches :

### *Statistical method.*

This method allows:

1. To define indices of health and results of activity of medical establishments quantitatively;
2. To reveal influence of various factors on person's health (strong, weak, direct and inverse dependences);
3. To define efficiency of medical and sanitary actions (including economic);
4. To estimate dynamics of indices of health and to predict them;
5. To obtain necessary data for development of norms and standards in public health.

### *Historical method.*

Historical experience allows to solve modern problems of health protection more efficiently.

### *Method of an experiment and modeling.*

In relation to public health and health care it is possible to call as a method of an organizational experiment as he is directed to elaboration of the most rational forms and methods of work.

### *Method of expert evaluations.*

The essence of the method is in defining by an indirect way of these or those coefficients direct receiving of which isn't possible for a number of reasons as in many cases there isn't sufficient scientific knowledge for giving an ex-

haustive assessment to the studied phenomenon at the modern level. As a rule, experts are recognized authorities in the concrete field of medical science, practitioner.

*Method of economic researches.*

It gives the chance to establish influence of economy on health care and vice-versa health care on economy.

*The sociological method* is used for obtaining information directly from the population and allows:

1. To define the attitude of representatives of various groups of the population towards the health;
2. To reveal features of behavior of the population in conditions of the current system of the treatment-and-prophylactic care;
3. To reveal peculiarity of a life style;
4. To resolve issues of the scientific organization of work, the budget of time of various groups of medical staff, etc.

*Medical and geographical methods.*

Provides studying of phenomena in various territorial zones and geographical regions for justification of regional features of needs of the population of medical care.

*System-analysis technique.*

Creating of logical model, its information support, mathematical expression and assessment of expected results at various versions of organizational decisions. This method considers interrelation of household, production, ecological factors, peculiarities of the organization of medical care to the population with its health.

## **LECTURE 2**

### **PUBLIC HEALTH AND HEALTH CARE SERVICES. THE SYSTEMS OF PUBLIC HEALTH CARE SERVICES. INTERNATIONAL COOPERATION IN PUBLIC HEALTH AREA**

*Questions:*

1. Public health, health, health care services.
2. The basic principles of state policy in the field of health care.
3. Health care systems.
4. International cooperation in public health.
5. WHO, structure.
6. Regional organizations of WHO.
7. Program of work of WHO.
8. WHO contacts.
9. Problems of the european strategy «health for everyone in the 21st century».

## **1. Health, public health, health care services**

Health is a condition of absolute physical, mental and social well-being, and not just absence of diseases or physical defects.

(From the Charter of WHO)

«Health is a condition of full physical, spiritual and social well-being of the person, and not just absence of diseases».

(Article 1 of the Law RB «About Health Care»)

Public health is the health of the population caused by complex influence of social, biological factors and factors of the environment.

«Health care is a field of activity of the state which purpose are the organization and ensuring available medical care of the population» (Article 1 of the law RB «About Health Care»).

## **2. The basic principles of state policy in the field of health care**

The basic principles of state policy in the field of health care:

- creation of conditions for preservation, promotion and recovery of population health;
- ensuring availability of medical care, including provision of medicines;
- priority of measures of a preventive orientation;
- priority of development of primary medical care;
- priority of medical care, including provision of medicines, underage, women during pregnancy, delivery period and during the recovery period after the delivery, disabled people according to the legislation of the Republic of Belarus;
- ensuring sanitary and epidemic wellbeing of the population and its future generations;
- formation of a responsible attitude of the population to preservation, promotion and recovery of own health and health of people around;
- responsibility of republican public establishments for the state of health of the population;
- responsibility of employers for the state of health of workers.

## **3. Health care systems**

Public health systems:

- state;
- insurance;
- private.

The basic principles of the state public health system.

1. The comprehensive principle is the state character of health care constitutional guarantee to all citizens of the right to health protection;
- all organizations of health care accessory to the state;
- allocation from the state budget of funds for health care;
- planned character of development of material and technical resources, personnel and financial security of health care.

2. Free of charge and general availability.

general availability assumes free of charge;  
approach of medical personnel to the population.

3. Preventive orientation.

organization of social and economic and medical actions for the prevention of diseases and elimination of the reasons of their emergence;

control of implementation of hygienic norms and rules, implementation of the sanitary legislation;

formation of a healthy lifestyle and hygienic training / education;

4. Unity in public health care.

unity of science and practice.

unity of treatment and prevention;

5. Planning of development of health care.

6. Public character.

the solution of many questions with participation of public organizations and the population.

7. Internationalism in health care

interaction with experts at international level.

State health system:

Great Britain;

Slovakia;

Bulgaria;

Denmark;

Ireland;

Greece;

The Republic of Belarus.

Insurance medicine

Insurance system is a health system in which expenses on health protection insurance premiums prevail.

Financing sources:

— subsidies of the state

— target contributions of employers

— contributions of workers

Insurance medicine:

Canada;

France;

Germany;

Japan;

Finland;

Italy;

Sweden;

Russia.

## Types of medical insurance

### 1. Compulsory insurance

- noncommercial;
- one type of social insurance;
- it is carried out by the state;
- rules of insurance are defined by the state;
- insurers are employers, the state.
- source of funds — contributions of employers, state budget. The program (the guaranteed minimum of services).
- fares are established according to a single approved technique
- quality control systems are defined by state establishments
- income can be used only for main activity — medical insurance

### 2. Voluntary insurance

- commercial;
- one type of personal insurance;
- individual or group insurance;
- it is carried out by insurance companies;
- rules of insurance are defined by insurance companies;
- insurers — physical people and artificial people;
- source of funds — personal income of citizens, profit of employers;
- the program is defined by the contract of the insurer and assurer;
- fares are established by the contract of the insurer and assurer;
- quality control system is installed by the contract of subjects of insurance;
- income can be used for any commercial and noncommercial activity.

### The main principles of medical insurance:

1. Comprehensive and universal principles, including prevention, treatment, rehabilitation.
2. Uses the highly effective, approved medical technologies.
3. Irrevocable basis.
4. Not recognizing deficiencies.
5. Demands high medical culture and professionalism.
6. This type forces each person to care for their health.
7. Medical insurance companies carefully count technological and economic efficiency of new technologies.

Private health system – is a mainly paid system which is financed from personal means of the population and medical care is represented mainly on a paid basis.

### Private health system:

USA;  
Israel;  
South Korea;  
Netherlands.

Difference between the state, insurance and private systems of health care is the financing source.

#### **4. International cooperation in public health**

Peculiarities in health care of all countries:

Absence of a united source of financing;

Absence of funds for health care.

Reforming of health care happens in the following directions:

— search of additional sources of financing;

— improvement of resources of health care;

— improvement of efficiency of using material and technical resources;

— improvement of quality of medical care.

Basic principles of development of health care (WHO)

— responsibility of the state for public health care, creation of the unified national plan of health care;

— development of public and individual prevention;

— providing the population with the qualified, public medical care;

— using of achievements of medical science widely;

— attracting to participate in carrying out all programs of health care of wide circles of the population.

International collaboration in health

World politics

The world politics is a set of actions of subjects of policy — state, interstate combinations and the international organizations for realization of their and common interests.

The international relations is a set of political, economic, diplomatic, military, cultural, scientific and technical and other connections and relationship between the people, between the states and associations of the states.

This area functions and develops already according to the own laws not always coinciding with regularities of life of the certain states. The created environment exerts active impact on behavior of the states.

#### **5. WHO, structure**

The World Health Organization (WHO) is the directing and coordinating authority on international health within the United Nations' system. WHO experts produce health guidelines and standards, and help countries to address public health issues.

WHO also supports and promotes health research. With the help of WHO, governments can jointly tackle global health problems and improve people's well-being.

193 countries and two associate members are WHO's membership. They meet every year at the World Health Assembly in Geneva to set policy for the Organization, approve the Organization's budget, and every five years, to appoint the Director-General.

## **6. Regional organizations of WHO**

World Health Organisation regional offices.

Over 8 000 public health experts including doctors, epidemiologists, scientists, managers, administrators and other professionals from all over the world work for WHO in 147 country offices, six regional offices and at the headquarters in Geneva, Switzerland.

Director-General.

Dr Margaret Chan is the Director-General of WHO, appointed by the World Health Assembly on 9 November 2006. The Assembly appointed Dr Chan for a second five-year term at its sixty-fifth session in May 2012. Dr Chan's new term began on 1 July 2012 and continues until 30 June 2017.

Before being elected Director-General, Dr Chan was WHO Assistant Director-General for Communicable Diseases as well as Representative of the Director-General for Pandemic Influenza.

Short history.

When diplomats met in San Francisco to form the United Nations in 1945, one of the things they discussed was setting up a global health organization.

WHO's Constitution came into force on 7 April 1948 — a date we now celebrate every year as World Health Day.

Delegates from 53 of WHO's 55 original member states came to the first World Health Assembly in June 1948. They decided that WHO's top priorities would be malaria, women's and children's health, tuberculosis, venereal disease, nutrition and environmental sanitation — many of which we are still working on today.

WHO's work has grown to cover health problems that were not even known in 1948, including relatively new diseases such as HIV/AIDS.

1948 International Classification of Disease

International Classification of Disease (ICD), which dates back to the 1850s and was first known as the

International List of Causes of Death.

The ICD is used to classify diseases and other health problems and has become the international standard used for clinical and epidemiological purposes.

1952 — Dr Jonas Salk (US) develops the first successful polio vaccine.

1952–1964 — Global yaws control programme.

One of the first diseases to claim WHO's attention was yaws, a crippling and disfiguring disease that afflicted some 50 million people in 1950. The global yaws control programme, fully operational between 1952–1964, used long-acting penicillin to treat yaws with one single injection. By 1965, the control programme had examined 300 million people in 46 countries and reduced global disease prevalence by more than 95 %.

1967 — South African surgeon Christiaan Barnard conducts the first heart transplant.

1974 — The World Health Assembly adopts a resolution to create the Expanded Programme on Immunization to bring basic vaccines to all the world's children.

1974 — Onchocerciasis control programme. WHO worked for 30 years to eliminate onchocercosis – or river blindness – from West Africa. 600 000 cases of blindness have been prevented and 18 million children spared from the disease. Thousands of farmers have been able to reclaim 25 million hectares of fertile river land that had been abandoned because of the risk of infection.

1977 — The first Essential Medicines List appeared in 1977, two years after the World Health Assembly introduced the concepts of «essential drugs» and «national drug policy». 156 countries today have a national list of essential medicines.

1978 — The International Conference on Primary Health Care, in Alma-Ata, Kazakhstan. The International Conference on Primary Health Care sets the historic goal of «Health for Everyone» — to which WHO continues to aspire. The Conference strongly reaffirms that health is a fundamental human right and that the attainment of the highest possible level of health is the most important world-wide social goal whose realization requires the action of many other social and economic sectors in addition to the health sector. (Declaration of Alma-Ata. International Conference on Primary Health Care, Alma-Ata, USSR, 6–12 September 1978).

1979 — Eradication of smallpox. The eradication of smallpox — a disease which had maimed and killed millions — in the late 1970s is one of WHO's proudest achievements. The campaign to eradicate the deadly disease throughout the world was coordinated by WHO between 1967 and 1979. It was the first and so far the only time that a major infectious disease has been eradicated.

1983 — Institute Pasteur (France) identifies HIV. WHO has dedicated HIV/AIDS staff working in over 85 countries worldwide. They advised Ministries of Health on technical issues and provided assistance in scaling-up essential prevention, treatment and care services through the health sector. They work with other players including other UN agencies, nongovernmental organizations and affected communities to help plan, implement and monitor programmes. These country teams also help with advocacy and fundraising efforts in countries.

1988 Global Polio Eradication Initiative established.

Since 1992 — Belarus the active member of WHO.

The goal is to eradicate polio worldwide so that no child will ever again be paralyzed by this disease. Since its launch in 1988, the Global Polio Eradication Initiative has reduced the number of cases of polio by more than 99 % — from more than 350 000 per year to 1956 in 2006. Spearheaded by national governments, WHO, Rotary International, the US Centers for Disease Control and Prevention and UNICEF, it has immunized more than two billion children thanks to the mobilization of more than 20 million volunteers and health workers. As a result, five million children walk today, who would otherwise be paralysed, and more than 1.5 million childhood deaths have been averted.



2003 — WHO Framework Convention on Tobacco Control 21 May 2003 was a historic day for global public health.

After nearly four years of intense negotiations, the World Health Assembly unanimously adopted WHO's first global public health treaty. The treaty is designed to reduce tobacco-related deaths and disease around the world.

2003 Severe Acute Respiratory Syndrome (SARS) first recognized and then controlled.

2004 Adoption of the Global Strategy on Diet, Physical Activity and Health. WHO's Global strategy on diet, physical activity and health is meant to help fight heart disease, stroke, diabetes, cancer and obesity-related conditions. The strategy encourages people to be more physically active and eat healthier diets.

International Health Regulations.

One critical tool in the fight against the global spread of infectious disease is the International Health Regulations (IHR). Negotiated by WHO's Member States, the IHR established rules that countries must follow to identify disease outbreaks and stop them from spreading.

In 2005, the IHR were expanded to cover new diseases such as SARS (Severe Acute Respiratory Syndrome) and new strains of influenza, along with established diseases such as polio. Coming into force June 2007, the revised IHR ask countries to build up their capacity to prevent, protect and control disease outbreaks.

The new rules also give WHO a more direct role in investigating and stopping outbreaks. WHO works closely with countries to ensure they have the skills and people in place to carry out this work and to provide training and expertise where it is needed.

The role of WHO in public health

WHO fulfils its objectives in its core functions:

- providing leadership on matters critical to health and engaging in partnerships where joint action is needed;
- shaping the research agenda and stimulating the generation, translation and dissemination of valuable knowledge;
- setting norms and standards and promoting and monitoring their implementation;
- articulating ethical and evidence-based policy options;
- providing technical support, catalysing change, and building sustainable institutional capacity;
- -monitoring the health situation and assessing health trends.

The WHO agenda.

WHO has a six-point agenda: two health objectives, two strategic needs, and two operational approaches. The overall performance of WHO will be measured by the impact of its work on women's health and health in Africa.

Promoting development: Health development is directed by the ethical principle of equity: Access to life-saving or health-promoting interventions should not be denied for unfair reasons, including those with economic or social roots.

Fostering health security  
Strengthening health systems  
Association research, information and evidence  
Enhancing partnerships  
Improving performance  
Resources and planning.  
Multilingualism and WHO

WHO's six official languages — Arabic, Chinese, English, French, Russian and Spanish — were established by a 1978 World Health Assembly resolution, turning multilingualism into a WHO policy. Since the adoption of a 1998 resolution, all Governing bodies documents and corporate materials have been made available online in all official languages.

WHO's multilingual web site, publications and other resources ensure that health information reaches the people who need it, in the languages they can understand.

Multilingual communication bridges gaps and fosters understanding between people. It gives WHO more effective guide public health practices, reach out to international audiences, and achieve better health outcomes worldwide. In this way, multilingual communication is an essential tool for improving global health.

#### Structure of WHO

— World Health Assembly(is the world's highest health policy setting body and is composed of health ministers from states members. The members of the World Health Assembly generally meet every year in May in Geneva, the location of WHO Headquarters. The main tasks of the WHA are to decide major policy questions, as well as to approve the WHO work programme and budget and elect its Director General).

— The Executive Board(The World Health Assembly may elect any 32 countries members (the only rule is being equitable according to geographical distribution) for three-year terms, and each of the countries elected designates one person «technically qualified in the field of health» to the WHO Executive Board. The countries are elected by rotation, one-third of the membership being replaced every year, and may succeed themselves. Board members serve as individuals and not as representatives of their governments. The Executive Board meets twice a year, for sessions from a few days to several weeks, but it may hold a special meeting at any time. One of its important functions is to prepare the agenda of the World Health Assembly. The WHO constitution authorizes the board «to take emergency measures within the functions and financial resources of the Organization to deal with events requiring immediate action. In particular, it may authorize the director-general to take the necessary steps to combat epidemics and to participate in the organization of health relief to victims of a calamity»).

— The secretariat(central administrative body of WHO headed by a director-general who is appointed by World Health Assembly on representation of The Executive Board for a period of 5 years.

It consists of 5 departments:

- 1) hygiene of the environment and sanitary statistics
- 2) promotion of health services and health protection of a family
- 3) noninfectious diseases, development of health care and medicines
- 4) administrative management and medical staff
- 5) budget and finance

Regional organizations of WHO

- 1) European (bureau in Copenhagen, Denmark) — 51 member states of WHO.
- 2) African (bureau in Brazzaville, Congo) — 46 states.
- 3) East Mediterranean (bureau in Alexandria, Egypt) — 22 states.
- 4) Southeast Asia (bureau in Delhi, India) — 10 states.
- 5) The western part of the Pacific Ocean (bureau in Manila, Philippines) — 27 states.
- 6) American (bureau in Washington, the USA) — 35 states.

## **7. Program of work of WHO**

Tasks:

1. Development assistance;
2. Promotion of safety in the field of health care;
3. Strengthening of health systems;
4. Using the results of scientific research, information and actual data.

Main directions of the program.

- protection and strengthening of health of various groups of the population;
- environmental protection;
- fight against infectious and parasitic diseases, immunization and vaccination against epidemic diseases;
- protection and strengthening mental protection and strengthening of mental health.

Main spheres of activity:

1. Life style and health.
2. The risk factors influencing health of the population and the environment.
3. Reorientation and reforming of the health system.
4. Political, administrative, hygienic, personnel, research and other support for ensuring changes in the above-named areas.

Main indices:

- demography and social economy;
- mortality;
- morbidity;
- life style;
- environment;
- health care resources;
- quality of health care, price;
- health of mother and child.

Ethical basis of the program

- health as one of the major rights of the person;
- justice in health issues and protection and effective solidarity of the countries, groups and contingents of people in the countries;
- participation in public health activity and responsible attitude to certain people, groups of the population (communities) and institutions, organizations and sectors.

## **8. Contacts of WHO**

UNICEF — children's fund

ILO — the organization of work

FAO — food fund

IARC

UNDP — Program of development of the UN

International Red Cross

GLOBAL-SIDA-SPID

UNICEF.

UNICEF works in 190 countries and territories to protect the rights of every child. UNICEF has spent 70 years working to improve the lives of children and their families. Defending children's rights throughout their lives requires a global presence, aiming to produce results and understand their effects.

ILO.

The International Labour Organization (ILO) is devoted to promoting social justice and internationally recognized human and labour rights, pursuing its founding mission that social justice is essential to universal and lasting peace. Only tripartite U.N. agency, the ILO brings together governments, employers and workers representatives of 187 member States, to set labour standards, develop policies and devise programmes promoting decent work for all women and men. Today, the ILO's Decent Work agenda helps to improve economic and working conditions that give all workers, employers and governments a stake in lasting peace, prosperity and progress.

FAO (Food and agriculture Organization).

Achieving food security for all is at the heart of FAO's efforts — to make sure people have regular access to enough high-quality food to lead active, healthy lives.

Three main goals are: the eradication of hunger, food insecurity and malnutrition; the elimination of poverty and the driving forward of economic and social progress for all; and, the sustainable management and utilization of natural resources, including land, water, air, climate and genetic resources for the benefit of present and future generations.

IARC.

The International Agency for Research on Cancer (IARC) is the specialized cancer agency of the World Health Organization. The objective of the IARC is

to promote international collaboration in cancer research. The Agency is interdisciplinary, bringing together skills in epidemiology, laboratory sciences and biostatistics to identify the causes of cancer so that preventive measures may be adopted and the burden of disease and associated suffering reduced. A significant feature of the IARC is its expertise in coordinating research across countries and organizations; its independent role as an international organization facilitates this activity. The Agency has a particular interest in conducting research in low and middle-income countries through partnerships and collaborations with researchers in these regions.

#### Causes and prevention of cancer.

Emphasis is placed on elucidating the role of environmental and lifestyle risk factors and studying their interplay with genetic background in population-based studies and appropriate experimental models. This emphasis reflects the understanding that most cancers are, directly or indirectly, linked to environmental factors and thus are preventable. The IARC Monographs Programme is a core element of the Agency's portfolio of activities, with international expert working groups evaluating the evidence of the carcinogenicity of specific exposures. The Agency is also charged for studying approaches for the early detection of cancer and in evaluating prevention strategies.

#### Global reference for cancer information.

The IARC has an important role in describing the burden of cancer worldwide, cooperating with and assistance to cancer registries and in monitoring geographical variations and trends over time. Key publications include the Cancer Incidence in Five Continents series and GLOBOCAN. The classification of human tumours as reported in the WHO "Blue Book" series is an additional resource of value to cancer researchers and clinicians worldwide. In all cases the Agency strives to make its findings available to the widest possible audience.

#### Global cancer biobank

One of the products of IARC's coordinating role is an increasingly important biobank with currently approximately 6 million samples from 600 000 subjects in total. This resource permits the application of innovative laboratory-based methodologies to study the causes, early detection and prevention of cancer through collaborative studies with many international partners.

#### Education and training

A core part of the Agency's mission is educating and training cancer researchers worldwide. This is achieved through fellowships, courses and publications. Priority is given to training researchers from low and middle-income countries in the areas of cancer epidemiology and cancer registration.

#### Producing evidence-based science for global cancer control policies

The close working relationship between IARC and its parent organization, WHO, allows the research findings of the Agency to be translated effectively into timely policies for cancer control. This is manifest, for example, in coopera-

tion in terms of reduction in tobacco use, implementation of vaccination against viruses associated with cancer causation, or in assessing the effectiveness of intervention strategies. IARC is not involved directly in implementation of control measures, nor does it conduct research on treatment or care of cancer patients.

#### IASP.

The International Association for Suicide Prevention (IASP) is dedicated to preventing suicidal behaviour, alleviating its effects, and providing a forum for academics, mental health professionals, crisis workers, volunteers and suicide survivors. Founded by the late Professor Erwin Ringel and Dr. Norman Farberow in 1960, IASP now includes professionals and volunteers from more than fifty different countries. IASP is a Non-Governmental Organization concerned of suicide prevention.

#### WGO.

Mission of the WGO (World Gastroenterology organization).

To promote to the general public and health care professionals an awareness of the world wide prevalence and optimal care of digestive disorders through the provision of high quality, accessible, and independent education and training.

The WGO Vision: Global Guardian of Digestive Health. Serving the World.

Digestive disorders are pre-eminent among health care issues globally, a significant burden to national healthcare budgets and the single greatest cause of cancer death. While an increasing awareness of causative factors, coupled with dramatic advances in diagnostic and therapeutic approaches have led to improvements in the prevention, diagnosis and treatment of digestive disorders, these benefits have not been transmitted equally across the world and, especially, to those in greatest need.

As the global representative for gastroenterology, the role of the WGO is to:

- increase global public awareness of digestive disorders;
- provide independent and high quality educational opportunities to medical, nursing and other healthcare professionals in digestive disorders throughout the world, regardless of location;
- support healthcare professionals who care for those with digestive disorders throughout the world.

#### WGO Objectives

- To promote public awareness of digestive disorders worldwide.
- To provide the highest standards in education and training in gastroenterology around the world and objectively assess the outcomes.
- To create an educational network readily accessible and relevant to gastroenterologists in emerging societies to support their local professional development.
- To promote multi-disciplinary approaches to primary prevention, screening, early detection and optimal care of digestive cancers.
- To develop and disseminate global guidelines on important global issues in the clinical practice of gastroenterology.

— To promote an ethical approach to all aspects of the practice of gastroenterology.

— To promote the formation of gastroenterological organizations and encourage them to be members of WGO.

— To support and collaborate closely with all organizations interested in digestive disorders, including nursing, other healthcare workers and patient advocacy groups.

— To solicit financial support for the purpose of undertaking WGO's global and emerging society programs and activities.

— To communicate regularly WGO's strategic plan, activities and outcomes to its constituents.

#### WPA.

The WPA (The World Psychiatric Association) is an association of national psychiatric societies aimed to increase knowledge and skills necessary for work in the field of mental health and the care for the mentally ill. Its member societies are presently 138, including 118 different countries and representing more than 200,000 psychiatrists. The WPA organizes the World Congress of Psychiatry every three years. It also organizes international and regional congresses and meetings, and thematic conferences. It has 72 scientific sections, aimed to disseminate information and promote collaborative work in specific domains of psychiatry. It has produced several educational programmes and series of books. It has developed ethical guidelines for psychiatric practice, including the Madrid Declaration (1996).

What are its aims? The core missions of WPA include the following:

— To encourage the highest possible standards of clinical practice.

— To increase knowledge and skills about mental disorders and how they can be prevented and treated.

— To promote mental health.

— To promote the highest possible ethical standards in psychiatric work.

— To disseminate knowledge about evidence-based therapy and values based practice.

— To be a voice for the dignity and human rights of the patients and their families, and to uphold the rights of psychiatrists.

— To facilitate communication and assistance especially to societies who are isolated or whose members work in impoverished circumstances.

#### Mission

To promote the advancement of psychiatry and mental health for all people of the world.

#### Objectives

— To increase knowledge and skills necessary for work in the field of mental health and in care for the mentally ill.

— To improve the care for the mentally ill.

— To prevent mental disorders.

- To promote mental health.
- To preserve the rights of the mentally ill.
- To promote the development and observance of the highest ethical standards in psychiatric care, teaching and research.
- To promote the development of the highest quality standards in psychiatric care, teaching and research, as well as the observance of such standards.
- To promote non-discrimination (parity) in the provision of care of the mentally ill.
- To protect the rights of psychiatrists.

The World Heart Federation.

The World Heart Federation is dedicated to leading the global fight against cardiovascular disease (CVD), including heart disease and stroke. With a focus on low- and middle-income countries, we are the only global advocacy and leadership organization bringing together the CVD community to help people lead heart-healthy lives. As the only CVD organization in official relations with the WHO, we align our efforts around the WHO goal to reduce premature deaths from non-communicable diseases (NCDs) by 25 % by 2025 (25by25). We realize that to achieve this target a primary focus on CVD — the world's number one killer, which makes up 50 % of all NCD deaths will be required. Together with our members — a community of more than 200 organizations dedicated to the treatment, prevention and control of CVD — we are working to end needless deaths from exposure to tobacco and other risk factors, lack of access to treatment, and neglected conditions like rheumatic heart disease which kills hundreds of thousands of children each year. Across 100 countries, we are acting now to build global commitment to address cardiovascular health at the policy level, generate and exchange ideas, share best practice, advance scientific knowledge and promote knowledge transfer to tackle CVD. We are at the heart of driving the CVD agenda and advocating for better heart health — enabling people to live longer, better and more heart-healthy lives, whoever and wherever they are.

International Committee of the Red Cross

Established in 1863, the ICRC operates worldwide, helping people affected by conflict and armed violence and promoting the laws that protect victims of war. An independent and neutral organization, its mandate stems essentially from the Geneva Conventions of 1949. We are based in Geneva, Switzerland, and employ some 16,000 people in more than 80 countries. The ICRC is funded mainly by voluntary donations from governments and from national Red Cross and Red Crescent Societies.

The work of the ICRC is based on the Geneva Conventions of 1949, their Additional Protocols, its Statutes those of the International Red Cross and Red Crescent Movement and the resolutions of the International Conferences of the Red Cross and Red Crescent. The ICRC is an independent, neutral organization ensuring humanitarian protection and assistance for victims of war and armed



violence. It takes action in response to emergencies and promotes respect for international humanitarian law and its implementation in national law.

To protect the lives and dignity of victims of armed conflict and violence and to provide them with assistance.

#### The ICRC's Mission Statement

The International Committee of the Red Cross is an impartial, neutral and independent organization whose exclusively humanitarian mission is to protect the lives and dignity of victims of armed conflict and other situations of violence and to provide them with assistance.

The work of the ICRC is based on the Geneva Conventions of 1949, their Additional Protocols, its Statutes — and those of the International Red Cross and Red Crescent Movement — and the resolutions of the International Conferences of the Red Cross and Red Crescent. The ICRC is an independent, neutral organization ensuring humanitarian protection and assistance for victims of armed conflict and other situations of violence. It takes action in response to emergencies and at the same time promotes respect for international humanitarian law and its implementation in national law.

It was on the ICRC's initiative that States adopted the original Geneva Convention of 1864. Since then, the ICRC, with the support of the entire Red Cross and Red Crescent Movement, has constantly urged governments to adapt international humanitarian law to changing circumstances, in particular to modern developments in the means and methods of warfare, so as to provide more effective protection and assistance for conflict victims.

Today, all States are bound by the four Geneva Conventions of 1949 which, in times of armed conflict, protect wounded, sick and shipwrecked members of the armed forces, prisoners of war and civilians.

Over three-quarters of all States are currently party to the two 1977 Protocols additional to the Conventions. Protocol I protects the victims of international armed conflicts, Protocol II protects the victims of non-international armed conflicts. In particular, these treaties have codified the rules protecting the civilian population against the effects of hostilities. Additional Protocol III of 2005 allows the use of an additional emblem — the Red Crystal — by national societies in the Movement.

The legal bases of any action undertaken by the ICRC are the following:

- The four Geneva Conventions and Additional Protocol I confer on the ICRC a specific mandate to act in the event of international armed conflict. In particular, the ICRC has the right to visit prisoners of war and civilian internees. The Conventions also give the ICRC a broad right of initiative.

- In non-international armed conflicts, the ICRC enjoys a right of humanitarian initiative recognized by the international community and enshrined in Article 3 common to the four Geneva Conventions.

- In the event of internal disturbances and tensions, and in any other situation that warrants humanitarian action, the ICRC also enjoys the right of initia-

tive, which is recognized in the Statutes of the International Red Cross and Red Crescent Movement. Thus, wherever international humanitarian law does not apply, the ICRC may offer its services to governments without constituting interference in the internal affairs of the State.

The ICRC's mission statement

The International Committee of the Red Cross (ICRC) is an impartial, neutral and independent organization whose exclusively humanitarian mission is to protect the lives and dignity of victims of armed conflict and other situations of violence and to provide them with assistance.

The ICRC also endeavours to prevent suffering by promoting and strengthening humanitarian law and universal humanitarian principles.

Established in 1863, the ICRC is at the origin of the Geneva Conventions and the International Red Cross and Red Crescent Movement. It directs and coordinates the international activities conducted by the Movement in armed conflicts and other situations of violence.

IASP

The International Association for the Study of Pain brings together scientists, clinicians, health-care providers, and policymakers to stimulate and support the study of pain and translate that knowledge into improved pain relief worldwide.

IASP is the leading professional forum for science, practice, and education in the field of pain. Membership is open to all professionals involved in research, diagnosis, or treatment of pain. IASP has more than 7,000 members in 133 countries, 90 national chapters, and 20 Special Interest Groups (SIGs). Founded in 1973, our association is governed by an international Council composed of officers and councilors elected by the membership. Members may also serve on committees, task forces, and working groups. The current IASP president is Judith Turner, Professor, Department of Psychiatry & Behavioral Sciences and Department of Rehabilitation Medicine University of Washington School of Medicine.

IASP brings together scientists, clinicians, health-care providers, and policymakers to stimulate and support the study of pain and to translate that knowledge into improved pain relief worldwide.

## **9. Problems of the european strategy «health for all in the 21st century»**

Strategy «HEALTH FOR ALL IN THE 21 ST CENTURY»

The HEALTH21 policy for WHO's European Region has the following main elements:

The one constant goal is to achieve full health potential for all.

There are two main aims:

- to promote and protect people's health throughout their lives;
- to reduce the incidence of the main diseases and injuries, and alleviate the suffering they cause.

Three basic values form the ethical foundation of HEALTH 21:

- health as a fundamental human right;
- equity in health and solidarity in action between and within all countries and their inhabitants;
- participation and accountability of individuals, groups, institutions and communities for continued health development.

Four main strategies for actions have been chosen to ensure that scientific, economic, social and political sustainability drive the implementation of HEALTH21:

- multisectoral strategies to tackle the determinants of health, taking into account physical, economic, social, cultural and gender perspectives, and ensuring the use of health impact assessment;
- health-outcome-driven programmes and investments for health development and clinical care;
- integrated family- and community-oriented primary health care, supported by a flexible and responsive hospital system;
- a united health development process that involves relevant partners for health at home, school and work and at local community and country levels, and that promotes joint decision-making, implementation and accountability.

Target 1. Solidarity for health in the European Region.

Target 2. Equity in health.

Even in the richest countries in the Region, the better-offs live several years longer and have fewer illnesses and disabilities than the poor. Poverty is the biggest risk factor for health, and income-related differences in health – which stretch in a gradient across all levels of the social hierarchy – is a serious injustice and reflects some of the most powerful influences on health. Financial deprivation also leads to prejudice and social exclusion, with increased rates of violence and crime. There are also great differences in health status between women and men in the Region.

Target 3. Healthy start in life.

Target 4. Health of young people.

Target 5. Healthy aging.

Health policies should prepare people for healthy aging by means of systematically planned promotion and protection of their health during life.

Target 6. Improving mental health.

Improving mental health — and especially reducing suicide — requires attention to the promotion and protection of mental health during life, particularly in socially and economically disadvantaged groups.

Target 7. Reducing communicable diseases.

Reducing communicable diseases requires an integrated approach combining health promotion, disease prevention and patient treatment. Improvement and maintenance of basic hygiene, water quality and food safety are essential, as

well as sustainable and effective immunization programmes and well directed treatment schedules.

Target 8. Reducing violence and noncommunicable diseases.

Cardiovascular diseases, cancer, diabetes, chronic obstructive lung disease and asthma combine to create the greatest health problems in the Region. A large part of these problems could be eliminated if all countries organized, both at country level and in local communities, an integrated programme to reduce the risk factors that are common to many of these diseases.

Target 9. Reducing injury from accidents.

Reducing injury from violence and accidents requires improved emergency services in many countries and stricter enforcement of the well known preventive measures that can cut accidents on the roads, at work and at home. Higher priority needs to be given to issues related to social cohesion and the major causes of violence — including domestic violence — with particular attention to alcohol.

Target 10. A healthy and safe physical environment.

Target 11. Healthier living.

Trade and agricultural policies should continue to be realigned to promote health, provide safe food and protect the environment. Promoting more healthy eating and reducing obesity would result in considerable health gains, especially among vulnerable groups. This requires fiscal, agricultural and retail policies that increase the availability of, access to and consumption of vegetables and fruits and reduce the consumption of high-fat food, particularly for low-income groups. Health education alone is not sufficient to tackle health and food issues successfully.

Target 12. Reducing harm from alcohol, drugs and tobacco.

Target 13. Settings for health.

The home is the physical environment in which people spend most of their time. In the context of urban and rural planning the home should be designed and built in a manner to conduct to sustainable health and the environment. The home is the primary unit of society, where family members can enact their own health policies such as a smoke-free and safe environment and healthy eating. Family health physicians and trained, home-visiting family health nurses can be very good catalysts for health action.

Target 14. Multisectoral responsibility for health.

Target 15. An integrated health sector.

Health services cost a lot of money and count among the Region's major employers. In many countries in the more eastern part of the Region, health expenditure today is too low. At the same time, increasing numbers of older people, rising levels of poverty and the introduction of new technologies all point to the need for more health spending in all Member States in the future. That is, if countries continue in the same way as now. Fortunately, however, solutions that can improve both the quality and the cost-effectiveness of health systems are

available. Moreover, they often do not require major investment, only a willingness to strengthen the overall design of the system and to sharpen the management focus on public health programmes and on patient care.

Target 16. Managing for quality of care.

A major problem in the overall design of today's health systems is that far too little systematic effort is made to measure accurately — and reflect on — the real value that alternative strategies and methods might have in reducing a given health problem for the population. What is the relative effectiveness and cost of the different methods to prevent, diagnose and treat, for example, allergies, heart disease and depression? There is an urgent need to find a more unifying management concept — one that will stimulate the search for better quality and reward innovations, not stifle them.

Target 17. Funding health services and allocating resources.

The funding of health care should ensure equity and sustainability. Whatever system is used, governments must ensure that it provides universal coverage and access to health care, as well as containing overall costs. As concluded by the 1996 Ljubljana Conference on health care reform, there is no room for unrestrained market activity in the funding or provision of a social good like health care. Moreover, market mechanisms targeting the individual or funding institutions have been notably less successful in terms of equity and efficiency than those targeting hospitals and other healthcare providers. Payment systems for primary health care providers that combine elements of capitation, free choice of provider and fee-for-service, foster better possibilities for managing the system to achieve high quality, cost-effective use of resources, user and provider satisfaction, and a focus on health promotion and preventive services.

Target 18. Developing human resources for health.

Educational programmes for health care providers and managers should be based on the principles of the health for all policy. Technical and managerial capacity-building will need to be enhanced at all levels and across sectors, with emphasis on health impact and action.

Target 19. Research and knowledge for health.

Target 20. Mobilizing partners for health.

Health for all is an integrated and forward-looking policy framework for setting priorities, choosing strategies and mobilizing resources for action for health in society. A national, targeted policy based on health for all values is the key to providing motivation and setting a framework for policies and action in regions, cities and local communities, and in settings such as schools and workplaces.

Target 21. Policies and strategies for health for all.

## **LECTURE 3**

### **MEDICAL STATISTICS AND ITS METHODOLOGICAL FEATURES**

### **Questions:**

1. Medical statistics.
2. Statistic research stages.

#### **1. Medical statistics.**

The term «*statistics*» (from Latin word ‘status’ means ‘state’).

Statistics is the science studying quantitative side of mass social phenomena and processes indissoluble connection with their qualitative side in concrete conditions of place and time.

*Medical (sanitary) statistics* is the science studying social health and health care which contributes to working out of measures on population health improvement.

Purposes of medical statistics:

- to study the most important problems of medicine, hygiene, health services in particular:
- to determine population health indices;
- to estimate the influence of social-biological factors on people’s health;
- to analyze the data about a network, staff and activity of medical-prophylactic organizations;
- to determine effectiveness of medico-prophylactic measures;
- to use statistic methods in experimental, clinical-biological, social-hygienic researches.

#### **2. Statistic research stages.**

I stage. Making up the statistic research program and plan.

II stage. Organizing and collecting statistic material.

III stage. Grouping, working out and summing statistic material.

IV stage. Analysis of the received data, conclusions and suggestions.

Before the beginning of statistic research it is necessary to determine research aim and purposes, to formulate the topic.

Research aim must be topical for medical science and practice of health services; it must determine ways of solving the given problem.

Research purposes are concretized, broadened and specified determining of the aim. Usually the number of the tasks may be from 3 to 6.

I stage of statistic research is making up statistic research program and plan.

Statistic research program includes the following issues:

1. To determine an observation unit and to make up the program of material collecting.
2. To make up the program of material working out.
3. To make up the program of the collected material analysis.

1. Determining of an observation unit and the program of material collecting.

Observation unit (computation unit) is every primary element of the statistic totality having the signs of similarity and difference.

Statistic totality is the group consisting of relatively similar elements taken

together in the known terms of time and space according to the given aim.

We distinguish two kinds of totality: general and selective.

General totality is the totality of all possible units which may be related to it.

Selective totality is part of the general totality chosen by a special selective method and intended to characterize the whole general totality.

Selective totality must be representative, it must include sufficient number of observations (quantitative representative ness) and must be typical for the whole general totality from which this selection is made (qualitative representative ness).

Signs by which the elements of statistic totality are distinguished and subjected to computation are called registering signs.

By their character registering signs may be:

- attributive (descriptive) signs — expressed by words;
- quantitative signs — expressed by a number.

By the role in the totality:

- factor signs influencing on the studied phenomenon;
- resulting signs changing under the influence of factor signs.

Program of material collecting is the working out of a primary statistic document pattern. Registration document may be represented as a list, journal, statistic blank or a card, questionnaire or a protocol. It must have: a passport part clearly formulated and put in a certain order questions of the program with variants of the prepared answers and the date of filling in the document. Variants of the prepared answers are called «grouping».

Grouping of the answers on attributive signs is called typological, and if the sign is quantitative it is called variable.

1. The program of processing the received data envisages making up statistic tables models.

Vertical columns of the table are called graphs, and horizontal ones are lines.

We distinguish a statistic subject and a statistic predicate in the table.

1. Statistic subject is the main registering sign analyzed in the table.
2. Statistic predicate (one or several) are statistic signs which supplement and reveal the subject.

analysis program gives a list of statistic methods necessary to reveal patterns of the studied phenomenon.

plan of statistic research includes the following elements:

1. Choice of the object of research.
2. Determining the statistic totality volume.
3. Fixing the terms of the research realization, its kinds and ways of observing and material collecting.
4. Determining of the personnel with the help of which the research will be carried out.

5. Determining of people which will accomplish organizing methodical supervision of the researches.

6. Characteristics of the technical equipment and required financial means.

Statistic research object is the statistic totality (of phenomena, objects, persons) about which information will be collected.

Statistic research volume is the number of observations included into the research.

Characteristics of the technical equipment and required financial means:

— laboratory equipment;

— stationary;

— financial means.

By time we distinguish 2 kinds of statistic observation: one-time and current observation.

One-time observation is the observation at a certain moment of time. Examples: census of population, one-time computation of medico-prophylactic organizations, doctors, beds, etc.

Current observation is continuous observation carried out during a certain period of time (month, year, and so on).

Examples: registration of morbidity, mortality, birth rate, etc.

By the degree of scope we distinguish 2 kinds of statistic observation: overall and selective.

Overall observation is the registration of all the totality objects which interest the researcher (general totality).

Selective observation is the registration of not all cases but only their part (selective totality).

Methods of the studied phenomena choice (selection):

Random selection is the selection carried out by a lot or tables of random numbers. Random will be choice of patients surnames which begin with a certain letter.

Mechanical selection is the selection when from the whole totality we take for studying mechanically chosen every fifth (20 %) or every tenth (10 %) observation unit, that is in a certain interval.

Cluster (serial) selection is the selection when from the whole general totality we chose not separate units but a series.

Method of general massif is used in studying of those objects in which the majority of the studied phenomena is concentrated. The main part characterizing the whole statistic totality is chosen from all the observation units forming a part of the given object.

Direct selection is the selection when from general totality only those observation units are chosen which allow to reveal influence of unknown factors in eliminating the influence of the known ones.

Typological selection is the selection of units from previously grouped qualitatively similar groups.



Ways of receiving primary information:

1. Direct observation: direct check-up or instrumental examination of a sick or healthy person and registration of the received data.
2. Method of data extracting from primary medical documentation. It is made on special cards of choice or statistic blanks.
3. Anamnestic method of material collecting. This method consists of registering the information received from the patient or his relatives.
4. Reporting method consists of information collecting with the help of the system of reporting-registration documentation.

II stage of statistic research includes organizing and carrying out statistic material collecting.

Material collecting is carried out according to previously made up research program and plan.

III stage of statistic research includes grouping, processing and summing of statistic material.

It includes the following successively made actions:

1. Control is carried out with the aim of choosing registration documents having defects.
2. CIPHERING is a conventional symbol of every selected grouping of the studied sign by a certain cipher (code).
3. Grouping is the distribution of the collected material according to attributive or quantitative sign (typological or variable).
4. Material summary is the summarization of isolated cases received by observation into certain groups. The results of statistic summary and materials grouping are shown in tables. In the tables all the received data are registered firstly in absolute values.
5. Computation of statistic indices. The program of analysis is realized.
6. Graphic images.

Graphs are divided into diagrams, cartograms and cartodiagrams.

Kinds of diagrams are linear, radial, columnar, sector, figure.

Linear diagrams are used to show phenomenon dynamics. With the help of linear diagrams it is expedient to show indices dynamics of population movement, morbidity, network of medical establishments, etc.

Radial diagram is based on the system of polar coordinates showing phenomenon dynamics within a closed period of time (24 hours, a week, a year). Seasonal variations of infectious morbidity, daily variations of calls to the First Aid Station, fluctuations of discharged patients number and the admitted ones to hospitals on particular days of the week and so on.

Columnar diagram is used to show dynamics of the phenomenon statistics as well as the phenomenon structure.

Sector diagram is used to show the phenomenon structure (structure of morbidity or structure of population mortality causes, etc.).

Statistic cards — cartograms — show intensity of statistic indices in geographic, administrative regions. For example, indices of birth rate, mortality, morbidity or other data are drawn onto a contour card by means of various coloring, shading or with the help of isolines showing regions with similar indices.

Cartograms. Diagrams of various kinds are drawn onto a contour card.

Columnar, linear, radial diagrams, cartograms, cartodiagrams are used for graphic image of intensive indices.

Extensive indices may be graphically shown as sector diagrams as well as cartograms.

Indices of visibility are shown by a columnar diagram, cartogram and cartodiagram.

IV stage — analysis of the received data, conclusions and suggestions.

analyzing the material we study deeper with all interacted factors, reveal main influencing causes, exclude accidental phenomena and so on. We think over, compare, discuss, make conclusions, work out measures to be used in practice.

Methods of statistical data processing.

Parametrical quantitative methods of statistical data processing which application demands obligatory knowledge of the law of distribution of the studied signs in total and calculations of their key parameters.

Nonparametric quantitative methods of statistical data processing which application doesn't demand knowledge of the law of distribution of the studied signs in total and calculations of their key parameters.

## LECTURE 4

### DEMOGRAPHY. BASIC CONCEPTS AND METHODOLOGY OF STUDYING FEATURES AND TENDENCIES OF MODERN DEMOGRAPHIC PROCESSES

#### *Questions:*

1. Demography. Medical demography.
2. Organization of statistics of the population.
3. Migration.
4. Birth rate.
5. Mortality.
6. Infantile mortality.
7. The average life expectancy at birth.

#### **1. Demography. Medical demography**

*Demography* (from prefix demo- from Ancient Greek δῆμος *dēmos* meaning «the people», and -graphy from γράφω *graphō*, implies «writing, description

or measurement») is the statistical study of populations, especially human beings. As a very general science, it can analyse any kind of dynamic living population, i. e., one that changes over time or space (see population dynamics). Demography encompasses the study of the size, structure, and distribution of these populations, and spatial or temporal changes in them in response to birth, migration, ageing, and death.

Subject of demography are laws of the natural movement of the population as process of continuous renewal of its number and structure during change of one generation by another.

Applying statistical and mathematical, and also actually demographic methods (the longitudinal and cross analysis of generations, a method of creation of tables of survival, fertility, mathematical models of the population, etc.), demography develops the theory of reproduction of the population, demographic forecasts, proves population policy.

Demographic indices in Belarus:

Population size 9 498,4

Male 4 420 842

Female 5 077 522

Urban 77,6 %

Rural 22,4 %

2015

Birth rate 12,5

Mortality 12,6

Infantile mortality 3.0

Natural increase — 0.1

Main directions of studying of the population:

The statistics of the population studies the number and structure of the population on a certain timepoint (the main tool — a population census).

Dynamics of the population studies change of population in time (the current accounting of demographic events).

Main objectives of statistics of the population:

Population definition.

Establishment of structure of the population (on a sex, age, belonging to urban or country people, education level, occupation characteristics, etc.).

Studying of the correlation taking place in the population and between its various groups.

Studying of dynamics of number and structure of the population in time and space.

Forecasting of number and structure of the population.

Some historical references.

Confucius «Book of kingdoms», 6th century B. C.: for 2275 BC the Minister Yu at the emperor Yao carried out calculation of the population and its property.

Ancient Greece, Attica, 6th century BC: Solon's reforms including calculation of the population.

Ancient Rome, at the 6th emperor Serviya Tuliya, the 5th century BC: requirement — the calculation of the population which was carried out by special officials — censors.

Peter I's edict of 1702 «About giving in the Patriarchal spiritual order to parsons of week sheets about born and died».

Peter I's edict of 1704 «About a general census of the yards and peasants».

From 1718 to 1860 in Russia 10 audits (censuses) of the population are carried out.

The USA, 1790 — the beginning of periodic population censuses of enumeration in modern understanding.

## **2. Organization of statistics of the population**

Data according to the population are gathered and processed by bodies of the state statistics and departments.

Primary establishments: the regional passport offices (which have arrived, decreased), regional departments the civilian registrar's (born, died, married, divorced).

Regional departments of statistics — summarizing of information at the regional level.

Regional managements of statistics (departments of statistics of the population) — generalization and the analysis of information at the regional level.

The ministry of statistics and analysis of the Republic of Belarus — processing, the analysis of information at the republican level.

Bodies of the international statistics: The statistical commission and the Commission on the population of the UN (since 1946), and also the special demographic department of economic and social Council of the UN making since 1948. Annual demographic collection (Demographic Yearbook).

Census of enumeration — scientifically organized statistical operation with the data acquisition purpose about the number, structure and accommodation of the population.

Features of a modern population Census of enumeration :

coverage of all territory of the country;

unity of the program of a census for all population;

individualization of data of a census of enumeration since the characteristic of all population is received through the characteristic of certain people;

considering that data receive directly at the rewritten persons, there is a principle of self-determination;

centralization which defines contemporaneity of registration, unity of interpretation of questions and answers, reports and processings of material.

Domestic population censuses of enumeration:

1897 (on February 9)  
1920 (on August 28)  
1926 (on December 17)  
1937 (results are cancelled)  
1939 (on January 17)  
1959 (on January 15)  
1970 (on January 15)  
1979 (on January 17)  
1989 (on January 12)  
1999 — the first population census after the collapse of the USSR  
2009 — October

In the analysis of sex composition of the population two indicators are used:  
percentage of men and women in the number of all population, and also in  
urban and country people, in separate professions, etc.  
number of the men falling on 1000 women.

### **3. Migration**

Migration is the territorial movement connected, as a rule, with change of the residence.

Types of migration:

According to the direction: external and internal (interdistrict, intraregional, interregional).

According to organization degree: unorganized and organized.

According to movement time: irrevocable, temporary, seasonal, pendular.

Assessment of migratory processes:

migration turn — the sum arrived and decreased;

the general intensity of migration — the attitude of number of the migrating persons towards population of this territory;

balance of migration — a difference between quantity arrived and decreased.

Natural movement of the population: births, death, marriages and divorces.

The accounting of the natural movement of the population is called the current accounting of demographic events and is carried out continuously and regularly.

Source of data on a demographic event — civil registration.

As legal basis for drawing up the act of the birth and the act of death the following primary medical documents serve:

Health certificate on the birth (form 103/at).

Medical certificate on death (form 106/at).

Medical certificate on perinatal death (form 106-1/y).

Terms of registration of the birth and death:

the birth — 1 month;

still born — 3 days;

death — 3 days.

#### 4. Birth rate.

Birth rate — a process of renewing further generations basing on biological factors which influence the organism's ability of reproducing progeny.

Total birth rate coefficient:

$$\frac{\text{Total number of the born alive within a year} \times 1000}{\text{Average annual population size}}$$

The values of the total birth rate coefficient are evaluated according to the special scale (table 1).

Table 1 — The scale of values of the total birth rate coefficient

Total birth rate coefficient, ‰	Evaluation of the birth rate
up to 11,0	Low
11,0–13,9	Below medium
14,0–16,9	Medium
17,0–19,9	Above medium
20,0 above	High

For thorough characterizing of the birth rate it's necessary to know the fertility coefficient and age coefficients of birth rate.

Fertility coefficient:

$$\frac{\text{Total number of the born alive within a year} \times 100}{\text{Average annual number of fertile women (15–49 years of old)}}$$

Age coefficients of birth rate:

$$\frac{\text{Number of babies born from women of this age group within a year} \times 100}{\text{Average annual number of women of this age.}}$$

For computing the age coefficients of birth rate it's better to take a five-year interval (15–19; 20–24; 25–29; 30–34; 35–39; 40–44; 45–49 years).

To exclude the influence of the age-sex composition of population and determine the degree of present reproducing, it's necessary to compute reproducing coefficients of population:

1. Total coefficient of birth rate.
2. Gross-coefficient of reproducing.
3. Net-coefficient of reproducing.

Total coefficient of birth rate shows how much in the average a woman would give birth within her whole reproductive period in case of preserving the

birth level of the year for which this index is computing. For substituting parents' generation for children's one the total coefficient of birth rate must be about 2,2.

Gross-coefficient of reproducing woman population — a number of girls born by one woman within the whole reproductive period of life.

Net-coefficient of reproducing woman population — a number of girls born by one woman within the whole reproductive period of her life and having lived up to the age at which the woman had given birth to these girls.

### 5. Mortality

Mortality indices are the most important demographic indices characterizing the state of social health.

More precise characteristics of mortality may be given by total and special mortality coefficients.

Total mortality coefficient:

$$\frac{\text{Total number of the deceased within a year} \times 100}{\text{Average annual population size}}$$

The values of the total mortality coefficient are evaluated according to the special scale (table 2).

Table 2 — Values of total mortality coefficient

Total mortality coefficient, ‰	Evaluation of mortality level
up to 10	Low
10,0–14,9	Medium
15,0–24,9	High
25,0–34,9	Very high
35,0 above	Extremely high

Special mortality coefficients are age mortality coefficients, indices of men and women mortality, city and village population mortality, death causes, different social and professional groups, etc.

Womenmortality:

$$\frac{\text{Number of the deceased women within a calendar year} \times 100}{\text{Average annual number of women}}$$

Mortality of men capable to work:

$$\frac{\text{Number of men capable to work within a year} \times 100}{\text{Average annual number of men capable to work}}$$

Mortality from malignant neoplasm:

Number of the deceased from

$$\frac{\text{malignant neoplasm within a calendar year} \times 100000}{\text{Average annual population size}}$$

Mortality of women from breast cancer at the age of 35–39:

$$\frac{\text{Number of women deceased from breast cancer at the age of 35–39 within a calendar year} \times 100000}{\text{Average annual number of women at the age of 35–39}}$$

Mortality of men living in a village and deceased from myocardial infarction at the age of 60–64:

$$\frac{\text{Number of men living in a village and deceased from myocardial infarction at the age of 60–64 within a calendar year} \times 100000}{\text{Average annual number of men at the age of 60–64}}$$

## 6. Infantile mortality

Infantile mortality — mortality of children at the age up to 1 year old. The coefficient of infantile mortality is computed by several ways:

*1<sup>st</sup> way* (is applied in case of stable level of birth rate) according to Bodio's formula:

$$\text{Infantile mortality} = \frac{\text{Number of babies deceased at the age of 1 year old within a year} \times 1000}{\text{Number the babies born alive in the given year}}$$

*2<sup>nd</sup> way* (is applied in case of sharp variations of the birth rate coefficient). Therefore the annual index of infantile mortality is computed according to *Rahts's formula*:

$$\text{Infantile mortality} = \frac{\text{Number of babies deceased at the age of 1 year old within a year} \times 1000}{\frac{1}{3} \text{ of babies born alive previous year} + \frac{2}{3} \text{ of babies born alive in the given year}}$$

*3<sup>rd</sup> way* (according to the formula offered by Vakhitov M. H. and Albitskiy V. Y.):

$$\text{Infantile mortality} = \frac{\text{Number of babies deceased at the age of 1 year old within a year} \times 1000}{\frac{1}{5} \text{ of babies born alive previous year} + \frac{4}{5} \text{ of babies born alive in the given year}}$$

The scale for evaluating the total coefficient of infantile mortality and used in European countries including Belarus is the following (table 3).

Table 3 — The scale for evaluating the total coefficient of infantile mortality

Coefficient of infantile mortality, ‰	Evaluation of infantile mortality level
---------------------------------------	---



up to 7,0	Low
7,0–9,9	Medium
10,0–14,9	High
15,0–19,9	Very high
20 above	Extremely high

World health assembly defined the *prenatal period* as the period beginning from the 22<sup>nd</sup> full week (154<sup>th</sup> day) of fetus' intrauterine life and ending after 7 full days (168 hours) after birth.

***Prenatal period:***

***antenatal*** —intrauterine (before labor);

***intranatal*** — during labor;

***early neonatal (postnatal)*** — the first week of life.

Each period has its own mortality index. The following indices may be computed:

$$\text{Antenatal mortality} = \frac{\text{Number of babies born dead within the year (or number of babies deceased before labor after 22 weeks of pregnancy)}}{\text{Total number of babies born alive and dead}} \times 1000$$

$$\text{Intranatal mortality} = \frac{\text{Number of babies deceased in labor within a year}}{\text{Total number of babies born alive and dead}} \times 1000$$

$$\text{Prenatal mortality} = \frac{\text{Number of babies born dead + Number of babies deceased within the first 168 hours of life}}{\text{Total number of babies born alive and dead}} \times 1000$$

Summing of antenatal and intranatal mortality gives still birth rate.

$$\text{Still birth} = \frac{\text{Number of babies born dead within a year}}{\text{Number of babies born alive and dead}} \times 1000$$

***Still birth*** is death of conception product before its complete expulsion or extracting from mother's organism not depending on duration of pregnancy.

$$\text{Neonatal mortality} = \frac{\text{Number of babies deceased within the first four weeks of life (till 28 days) in the given year}}{\text{Number of babies born alive in the given year}} \times 1000$$

$$\text{Early neonatal mortality} = \frac{\text{Number of babies deceased at the age of 0–7 days (till 168 hours) in the given year}}{\text{Number of babies born alive in the given year}} \times 1000$$

Number of babies

$$\text{Late neonatal mortality} = \frac{\text{deceased at 2-4 weeks of life}}{\text{Number of babies born alive} - \text{Number of babies deceased at 1}^{\text{st}} \text{ week of life}} \times 1000$$

$$\text{Postneonatal mortality} = \frac{\text{Number of babies deceased in the period from 29}^{\text{th}} \text{ day to 1 year old}}{\text{Number of babies born alive} - \text{Number of babies deceased within the first 4 weeks of life}} \times 1000$$

Registration of babies deceased till one year and in the prenatal period is carried out according to «Medical certificate of prenatal and infantile death» (form 106-2/u). All babies deceased till one year and fetus having body mass more than 500 gr are to have pathologic anatomic examination. In case of babies (fetus) death during multiple labor death certificate is given for each baby (fetus).

### **7. The average life expectancy at birth**

Life expectancy at birth is defined as how long, on average, a newborn can be expected to live, if current death rates do not change. However, the actual age-specific death rate of any particular birth cohort cannot be known in advance. If rates are falling, actual life spans will be higher than life expectancy calculated using current death rates. Life expectancy at birth is one of the most frequently used health status indicators. Gains in life expectancy at birth can be attributed to a number of factors, including rising living standards, improved lifestyle and better education, as well as greater access to quality health services. This indicator is presented as a total and per gender and is measured in years.

## **LECTURE 5**

### **TYPES OF HEALTH CARE SERVICES**

#### ***Questions:***

1. Medical care, definition, types.
2. Primary medical care.
3. General practitioner.
4. Out-patient clinic.
5. Dispenserization.
6. Hospital.
7. Emergency medical aid.

#### **1. Medical care, definition, types**

Medical care is provided to patients depending on a condition of their health, medical indications and contraindications, and also medical and diagnostic opportunities of the organizations of health care. Medical care is:

- primary medical care;
- specialized medical care.

Primary medical care — the main type in health care system to render medical help in the presence of the most widespread diseases at the patient, including injuries, poisonings and other medical emergencies including also holding other actions directed to improvement of quality of life of the patient.

Specialized medical care — a type in health care system is known as specialized consultative healthcare usually for in-patients and on referral from primary and secondary healthcare for advanced medical investigation and treatment (hi-tech or unique methods of treatment, modern achievements of medical science and technology).

Medical care is:

- urgent medical care;
- planned medical care.

Urgent medical care — a form of medical help in health care system at sudden emergence for a patient with diseases, including injuries, poisonings and other medical emergencies, and also sudden deterioration in the state of health of the patient with the chronic diseases threatening his life at which urgent medical intervention is required.

Planned medical care — a form of medical help in health care system in cases which don't require urgent medical intervention and don't pose a direct threat for life of the patient or people around. Medical care is provided to the patient in out-patient or stationary conditions. Medical care is provided in out-patient conditions in case the patient doesn't need constant round-the-clock medical observation. Medical care is provided in stationary conditions in case constant round-the-clock medical observation and intensive treatment are required for the patient.

## **2. Primary medical care**

Primary health care is a set of the medical, social, prophylactic and rehabilitation actions provided at the level of primary contact of individuals, families and groups of the population with a health system taking into account the developed and created conditions of the habitat, a life style and directed to preservation and promotion of health.

According to the definition given at the international conference on primary health care (Alma-Ata, 1978), primary health care — is the first level of contact of the population with a health system;

Primary health care should be close to the residence and work of people and represent the first stage of continuous process of protection of their health

Primary health care:

1) integral part of system

health care;

2) component of the general and social

development.

Medical establishments:

\* polyclinics (adult, children's, specialized);

\* medical and sanitary parts and health centers at the enterprises;

\* stations of emergency medical service;

\* medico-genetic clinics, consultation departments «marriage and family»;

\* centers of hygiene, epidemiology and public health,

\* pharmacy.

In rural areas the first link in system of delivery of health care is a rural medical district: rural medical out-patient clinic, local rural hospital, rural medical and obstetrical center.

Purposes of primary health care:

— the organization and realization of medical and sanitary actions at the level of a certain group of the population, a community, a certain territory on carrying out preventive measures and delivery of health care, directed to preservation and promotion of health.

Primary health care has to include the following events:

— Sanitary education on the most urgent problems of health care and methods of their prevention and permission.

— Assistance in providing to a balanced diet.

— Providing with high-quality water supply.

— Providing with the main sanitary and hygienic actions.

— Health protection of children and mothers, including planning of a family.

— Vaccination.

— Prevention of the main infectious diseases.

— Prevention of the main noninfectious diseases.

— Ambulance and emergency aid.

— Diagnostic and other actions.

Main conditions of full functioning of primary health care

— priority allocation of material, personnel and financial resources on primary health care development (not less than 40 % of allocation for health care of the budget);

— development and deployment of special system of training of doctors, average health workers and social workers for work in primary health care institutions;

— providing the effective measures promoting prestige of service primary health care and its certain workers, building confidence in primary health care among a general population;

Main conditions of full functioning of public health care:

— active involvement of individuals, family and groups of the population in planning and the organizing activity of public health care service;

— interaction of health care with other social and economic sectors which activity is directed to the solution of the main social problems in society, creation of conditions for protection and improvement of public health

Basic principles of the organization of the out-patient and polyclinic help:  
availability

preventive orientation

continuity and staging

Positive sides of out-patient and polyclinic service:

— flexibility of organizational forms (for the cities);

— availability to the population specialized and emergency aid;

— territorial and industrial character;

— assistance;

— active;

— prophylactic work and medical examination.

Drawbacks of out-patient and polyclinic services:

— disconnectedness of information about the patient;

— long waiting list for specialist consultation;

— a possibility to visit of any specialist, passing visit of the district doctor;

— necessity to the patient to carry out self-diagnostics and choose a type of the specialist for treatment on his own;

— transfer acute disease in chronic phase pathology in consequence of a poor examination and treatment patients;

— formality in performing preventive measures and examinations of ability for work;

— absence of the doctor-coordinator of all medical and preventive help to the patient;

— duplication of activity of specialists and repeated procedures of carrying out diagnosis in hospitals;

— absence of the doctor bearing constant responsibility for health condition of the patient during all his life;

— lack of an option to choose the doctor;

— deterioration in indices of health of the population;

— additional labor costs.

Basic principles of family medicine:

— continuity and complexity of medical care;

— comprehensive character;

— high quality and availability of medical care.

### **3. General practitioner**

General practitioner (family doctor)

He graduated from medical university, provides individual primary and continues medical care for patients, families and the population, independently of age, sex or a type of a disease.

The main requirements for general practitioner (WHO):

— providing high professional competence, active collaboration with various groups of the population, usage of scientific progress and advanced achievements in all spheres of activity upon health protection.

General practitioner (family doctor) should promote achievement of four classical purposes:

promotion of health,  
prevention of diseases,  
treatment and rehabilitation.

General practitioner carries out roles:

1. person, who provides medical care.

— besides treatment, general practitioner should not only treat patients, but improve patients' social conditions, mental health care, and make solution of family problems).

2. person, who makes the decision.

— general practitioner must make decisions on rendering all types of medical care, proceeding from the principle of efficiency of actions and their financial possibilities.

3. general practitioner is an educator.

— general practitioner must be able to convince people of that each person is responsible for promotion and preservation of own health.

4. general practitioner is a social leader.

— general practitioner must know requirements and problems of society, to organize actions for public health care in society which will bring huge benefit to a large number of people.

5. general practitioner is a manager.

— general practitioner needs to find administrative skills.

Advantages of general practitioner:

— deals with undifferentiated diseases and diagnoses at an early stage of symptoms;

— uses simple technologies for diagnosing the disease;

— preventive focus;

— provides responsibility for health of the population;

— rational using financial, material and personnel resources for health protection.

The tendencies in overcoming difficulties in development of family medicine:

— overestimating efficiency of out-patient (polyclinic) system medical help;

— resistance of specialist to be a general practitioner;

— mentality of the population to ask different types of specialist for medical help in dependently;

— insufficient material and technical resources in out-patient clinics;

— deficiency of qualified medical staff.

Introduction of general practice give:

— for the patients and the population — availability, justice, equality, trust, care of a family, satisfaction, continuous treatment-and-prophylactic providing, a possibility of the choice of the doctor

— to society in general — gradual improvement of health of the population, decrease in level of premature and preventable mortality, detection of diseases at an early stage and their prevention, growth of satisfaction of the population with medical care.

— to the health system-responsibility for the patient, planning of a family, improvement of reproductive health of the population, improvement of inoculative work, development of primary and secondary prevention, continuity, staging, timeliness and improvement of quality of medical care, release of narrow specialists from routine work for improvement of the practical skills.

Main objective of creation of offices of general practitioners:

— Ensuring availability of primary medical care in areas.

— Improvement of continuity of delivery of health care at all levels.

— Ensuring holding complex of medical and social actions for promotion of health of each family member.

Decrease in need for stationary medical care and more rational use of bed fund.

Decrease in negotiability to specialists.

Promotion of social security of patients.

Increase in responsibility of health workers for health of the patients.

Results of work of offices of general practitioners:

— Increase in availability of quality of medical care.

— Improvement of continuity of delivery of health care at all levels.

— The quantity of calls for an emergency aid among the population are 3.3 times less, than in polyclinics.

The results of work of offices of general practitioners.

Negotiability to narrow specialties is 5 times lower than in polyclinic.

Level of hospitalization at offices of the general practitioner 30 % lower than in polyclinics.

#### **4. Out-patient clinic**

Municipal polyclinic (out- patient department) — is a multifunction medical organization of prophylactic and treatment, in its activity area it's aimed to implement wide prophylactic measures on preventing and reducing sickness rate and disability, prophylactic medical examination of population, early diagnostics of diseases, providing consultation and qualified specialized medical aid, im-

plementation of medical rehabilitation and formation of health lifestyle.

The basic structure of municipal polyclinic for adults:

City polyclinic

Management of polyclinic

The department of prevention

The therapeutic departments

Registry

Diagnostic and auxiliary departments (Clinical — diagnostic laboratory, radiology department, X-ray room, ultrasound room, functional diagnostics department (room), endoscopic room).

Pharmacy

Medical statistics department

Administrative and economic part (accounting, personnel department, lawyer's office, civil defense engineer's office, labour protection and safety engineer's office, record-keeping office).

Differences between office of general practitioner and polyclinic:

— level of specialization;

— activity volume.

The main aim of polyclinic is health saving and promotion of attached population to polyclinic, public medical care, meeting population demands in qualified and specialized medical care. According to the main goal, the tasks of the polyclinic are:

1) providing qualified and specialized public medical care in the served area in the polyclinic and at home.

2) improvement of organization of medical care, introduction in work practice the technologies of hospital substitution;

3) the organization and implementation of system of prophylactic events, oriented on reducing morbidity, disability and mortality of population;

4) the organization and implementation of public prophylactic medical examination;

5) providing continuity in activity of polyclinics, hospitals, dispensaries, theoretical and practical centers and other organizations and establishments;

6) improvement of organizations of types and methods of work in polyclinic is oriented on rising quality and effectiveness of treatment and diagnostic work and medical rehabilitation of sick and disabled.

7) implementation of work on public hygienic education.

Polyclinics are divided into:

— according to organizational feature:

— independent;

— integrated with a hospital.

II — according to a territorial feature:

— city/ municipal;



- rural.
- III — according to a profile:
  - adults;
  - nurseries;
  - the general (adult and children's population).
- IV — according to functions:
  - rural;
  - student's;
  - resort;
  - on the water transport;
  - on railway transport;
  - advisory;
  - specialized;
  - dental for adult and children's population;
  - physiotherapeutic.
- V — according to financing:
  - budget;
  - economic.
- VI — according to the volume of activity:
  - The I group — over 1200 visits per shift and the population over 80 000.
  - The II group — 750 visits per shift — 1200, 50 000–79 000 population.
  - The III group — 501–750 (the large city), 33 000–49 000 population.
  - The IV group — 251–500 visits, 17 000–32 000 population.
  - The V group — to 250 visits, to 17 000 of the population.
- Preventive measures in polyclinics:
  - coverage of dispensary observation;
  - decrease in morbidity;
  - decrease in disability and lethality;
  - immunization of the population against sharp infectious and epidemic diseases;
  - implementation of the plan of medical activity (sanitary and educational work).
- Main activity indicators of polyclinic for adults:
  - morbidity;
  - coverage of the population;
  - invalidization;
  - morbidity with temporary disability;
  - mortality;
  - duty of medical staff.
- Main sections of physicianwork:
  - preventive examinations of the special contingents of the population;
  - dynamic observation;
  - improvement of patients and people with risk factors.

Main tasks of policlinic activity:

- 1) annual obligatory examinations of contingents and other groups of the population;
- 2) identification of people with risk factors, patients at early stages of diseases;
- 3) active observation and improvement of patients and people with risk factors taking into account readiness of patients to carry out preventive actions;
- 4) examination, treatment and rehabilitation of patients;
- 5) creation of the automatic programs and databanks upon the population of district;
- 6) development and implementation of target programs. It will help to avoid formality of approach in maintenance of district physician.

### **5. Dispanserization**

Dispanserization — an active method of dynamic observation of the state of health of certain contingents of population (healthy and sick), capture of these groups of the population on the account for the purpose of early detection of diseases, dynamic observation and complex treatment of the diseased, holding actions for improvement of conditions of their work and life, to the prevention of development and spread of diseases, restoration of working capacity and extension of the period of active life style.

Problems of dispenseries:

- carrying out training of doctors of the general profile in the corresponding specialties;
- introduction of modern methods of prevention, diagnostics and treatment in practice in therapeutic — preventive institutions;
- promotion of a healthy lifestyle.

The main documents which are processed to the patients staying on the dispensary registry:

- medical record of the out-patient;
- control card of dispensary observation.

It serves for control of timely visit of the doctor and passing of the next medical examination, performance of the appointed types of treatment, improvement of actions and recommendations about employment.

Indicators of an assessment of the organization dispenseries:

- 1) quality of medical examination (coverage of dispensary control not observed within a year, coverage by various social and improving and treatment-and-prophylactic actions — sanatorium treatment, dietetics, rational employment, etc.);
- 2) efficiency of medical examination

Types of dispenseries:

- 1 — anti-tuberculosis dispensary;
- 2 — dermatological dispensary;
- 3 — oncological dispensary;

- 4 — psychoneurological dispensary;
- 5 — endocrinological dispensary;
- 6 — cardiological dispensary;
- 7 — narcological dispensary.

## **6. Hospital**

Municipalities are responsible for the organisation of hospital services. Each municipality must observe if people staying in that municipality receive the necessary specialised medical care. Country is divided in different hospital districts for the purpose of providing specialised medical care. Every municipality belongs to one of the hospital districts. Each hospital district has a central hospital and other hospitals. The hospital district is responsible for the provision of hospital services.

The Ministry of Health is responsible for the general planning, steering and monitoring of specialised medical care. Specialised medical care services are provided at hospitals. Specialised medical care refers to examinations and treatments, such as surgeries, provided by medical specialists at hospitals. The majority of the hospitals in Belarus are public, i.e. owned by municipalities or joint municipal authorities. University hospitals and central hospitals of the hospital districts are responsible for the most demanding medical operations. Furthermore, there are regional hospitals and local hospitals, such as city hospitals, in Belarus. Private hospitals supply the public services for example by providing day surgeries.

Access to treatment at hospitals.

To receive non-emergency specialised medical care, the patient must have a referral issued for example by a general practitioner at the health centre or an occupational health physician at municipal polyclinic.

Access to specialised medical care must be arranged within a specified period of time.

People in need of specialised medical services may choose any of the treatment facilities that operate within that area of highly specialised medical care where their municipality of residence is located.

Health care is rendered in a hospital at the most severe diseases that require an integrated approach to diagnosis and treatment, usage of complex methods of examination, treatment, surgical interventions, around the clock medical supervision and intensive care unit. At the hospital, the population receives a highly specialized medical care.

There are 4 marked out basic functions of a modern hospital:

- 1) restoration functions (diagnosis, treatment, rehabilitation);
- 2) prevention (primary and secondary prevention, including clinical examination) functions which are typical for the hospital combined with the clinic;
- 3) training functions (training for medical staff and postgraduate education);

4) research functions.

The hospital institutions are divided into the next categories:

1. On the administrative territorial principle:

- republican;
- provincial;
- municipal;
- central district;
- district;
- divisional hospitals.

2. Depending on the type of medical care:

- common-typed;
- specialized (infectious, tubercular, psychiatric, drug abuse clinic, dermatological, etc.).

3. Depending on the urgency of hospitalization of patients:

- emergency hospitals;
- the hospitals for planned hospitalization;
- the hospitals of mixed type (the most hospitals) where patients come with urgent indications and for a planned hospitalization.

4. According to the system of organization:

- combined with the polyclinic;
- not integrated with the polyclinic.

The hospital has usually 3 structural subdivisions: management, station, administrative and economic department.

At the head of the municipal hospital is a chief doctor who is responsible for medical-diagnostic, financial, administrative and economic work. The chief doctor has the following deputies on:

- the medical part (who direct medical diagnostic and sanitary and epidemic hospital work, supervises and who is responsible for the quality of care);
- the surgical activity (in hospital with the number of beds — 500 and above);
- the organizational and methodological work.

The structure of the hospital includes:

- the reception department. It can be centralized (for all hospitals) and decentralized for its separate main structural parts (example, the hospital reception for infectious diseases, for women in childbirth, etc.);
- medical main departments (therapeutic, surgical, neurological, gynecological, etc.);
- medical subsidiary departments (physiotherapeutic, exercise therapy, radiological, of hyperbaric oxygenation, hemodialysis, etc.);

- diagnostic departments (laboratories, roentgenologic department, the ultrasound diagnostics department, the department of functional diagnostics, the department of endoscopy, the department of radio-isotopic diagnosis, the department of morbid anatomy);

- operational unit;
- pharmacy.

The basic structural unit of the hospital is the main department. The hospital department consists of the wards in which there are patients, and subsidiary rooms of medical and household purpose. The capacity of rooms may be different. Advantage should be given to wards with 1–2–3 beds which have a separate sanitary unit (toilet, wash-bowl for hand washing, etc.).

The administrative household part includes food service sterilization and disinfection service, sanitary technical maintenance of the hospital (water supply, heating and ventilation), transport and other services.

### **7. Emergency medical aid**

Emergency medical aid (EMA) — a form of providing medical aid when a patient suddenly has some disease, trauma, intoxication or other emergency conditions, sudden worsening of the health level of a patient with chronic diseases, threatening his life, while which emergency medical interference is needed.

State system of organization of EMA is in function in Belarus, includes:

\* pre-admission level:

- in the cities EMA stations with substations and branches, traumatology centres,

- in the country administration districts — the departments of Emergency medical aid in Central district hospital (CDH) and EMA units

- in regions — the departments of Emergency medical aid in regional hospitals.

\* hospital level:

- hospitals of Emergency medical aid,

- the departments of emergency hospitalization of the general hospital network.

The structure of EMA service.

System of management of EMA service.

System of management of service has three levels:

1. Republican.

2. Regional.

3. District.

The principles of organization of EMA:

1. Availability.

2. Quickness in work.

3. Opportuneness.

4. Completeness.

5. High quality of provided aid.

6. Providing unimpeded hospitalization.

7. Maximum succession in work.

Tasks of EMA service:

1. Opportune providing of EMA to patients.

2. Providing the continuity of diagnostics — treatment process at the level of providing EMA with interconnection with out-patient — polyclinic state organizations of healthcare.

3. Providing constant readiness to start work of EMA service in the case of emergency situations.

4. Methodical and organizational work on developing of EMA service.

EMA service performs:

1. In 24 hours mode:

*In 24 hours mode* EMA service provides:

- acceptance of calls to EMA teams and proceeding of them to the EMA teams;

- providing 15-minute arrival in the city and 30-minutes arrival in the country of EMA teams to the appointed addresses since the moment of the proceeding of the message to EMA brigades (point 18 of the Instruction «About the organization of activity of emergency medical aid»).

2. In the mode of higher readiness:

*In the mode of higher readiness* EMA service provides:

1. creation of necessary reserve of the EMA brigades;

2. direction of necessary amount of EMA brigades to accompany mass events in case of emergency;

3. providing of interconnection of EMA brigades:

- \*among themselves and with territorial bodies of management of healthcare and state organizations of healthcare;

- \*with operation services on duty of the Ministry of Internal Affairs of the Republic of Belarus and with the Ministry of Emergency cases of the Republic of Belarus.

3. In emergency mode

*In emergency mode* EMA service provides:

1. notification about the emergency to all the managing bodies of healthcare;

2. direction to the zone edge of the necessary amount of EMA brigades;

3. performance of treatment — evacuation events to the injured while destructing the emergency case.

EMA brigade — the main functional EMA unit, consisting of doctor and (or) assistant(s), aid-man (-men), driver and provided with an EMA car.

Priorities of calls to EMA brigades.

Calls are divided into:

1. special;

2. urgent;
3. emergency.

*Special call of EMA brigade* — the call of EMA brigade to a patient, because of the conditions, which for the moment of call are dangerous for patient's life and health:

- accident;
- falling unconscious;
- children have rash with high fever;
- patient's intoxication with chemical substances or remedies;
- hanging, sinking;
- huge burn;
- deep and huge injuries;
- seizures;
- acute breath disorder;
- emergency case;
- traffic accident with injured;
- electrotrauma;
- falling from the height higher than patient's own height.

Special call of EMA brigade is passed by nurse or assistant responsible for calls to a free EMA brigade according to its specialty not later than 4 minutes after its registration.

*Urgent call of EMA brigade* — call of EMA brigade to a patient, because of the conditions, which for the moment of call are not dangerous, but without aid during an hour can cause a threat for patient's life and health:

- heart beat disorder (arrhythmia);
- heart attack;
- attack of asthma;
- trauma;
- foreign body;
- bleeding (gastrointestinal, uterine, nasal);
- frostbite;
- birth;
- sudden movement activity disorder;
- calling EMA brigade, connected with sharp worsening of patient's state with impossibility to clarify the reason of calling.

Urgent call of EMA brigade is passed by nurse or assistant responsible for calls to a free EMA brigade according to its specialty not later than 15 minutes after its registration.

*Emergency call of EMA brigade* — call of EMA brigade to a patient, because of the conditions, which for the moment of call are not dangerous, but without aid during a day can cause worsening to patient's health:

- significant change in blood pressure;
- allergy;
- headache;
- stomachache, backache, pain in chest;
- haemophilia;
- inadequate behaviour;
- renal colic;
- vomiting;
- rash;
- high fever (if the fever doesn't go down with the help of peroral remedies);
- acute urinary retention;
- food intoxication;
- sudden change of behavior of a child less than one year old;
- pain relief;
- transportation of a patient according to the call, made by medical worker.

Emergency call of EMA brigade is passed by nurse or assistant responsible for calls to a free EMA brigade according to its specialty or to out-patient state organization of healthcare during its working hours not later than 1 hour after call registration.

*Ineffectual visit of EMA brigade* — it's a visit finished without providing any medical aid to a patient, because of wrong address or patient's absence at the address or false call of EMA brigade.

Station (department) of EMA — is healthcare organization, which provides emergency medical aid to adult and child population in threatening life conditions, accidents, acute serious diseases and worsening of chronic diseases on the spot of an accident (staying) and on the way.

EMA station is a state organization of healthcare. The head of the station is appointed according to the legislation of the Republic of Belarus.

Tasks of EMA station:

1. Providing medical aid in the shortest time possible after getting a call of emergency medical aid to the ill and injured people, who are not inside the healthcare organizations and during their transportation into the hospitals.

2. Transportation of patients, who need emergency aid, injured, parturient women, immature infants with their mothers in the resuscitation ambulance on demand of doctors and administration of healthcare organizations.

EMA stations provide:

1. *Special medical aid:*

a) when there are sudden diseases threatening patient's life (acutely developing disorders of cardiovascular system, central nervous system, respiratory, abdominal (severe pain in the heart, asthma, acute abdomen, psychosis);



b) when accidents (different types of traumas, injuries, burns, hitting by electric shock, lightning, foreign bodies in respiratory tracks, frostbite, drowning, poisoning, suicide attempts) occur;

c) when birth giving occurred outside the specialized hospitals;

g) in mass catastrophes and natural disasters.

2. *Emergency medical care*: when worsening of different chronic diseases, when the reasons of calling can't refer to point 1, when there are acute diseases with children, especially during first year of life.

Hospital of emergency medical aid — is a multisectoral treatment — prophylactic organization for providing emergency medical hospital aid to population 24 hours a day, when there are acute diseases, traumas, accidents, intoxications, also when mass injuries, catastrophes, natural disasters.

Main tasks of HEMA

1. to provide emergency medical aid to patients when they are in conditions threatening lives, demanding reanimation and intensive care with applying methods and means of express-diagnostics and treatment at the level of modern achievements of medicine and practice.

2. to perform organized, methodical and consultant work of health improvement organizations of the city (district) when organizing emergency medical aid.

3. to perform measures on hospital's being constantly ready for work in case of emergency situations and mass attendance of injured in the city (region, district, republic).

4. to provide effective succession and interconnection with all the treatment and prophylactic organizations in the city (district) when providing medical aid at pre-admission and hospital levels.

5. The analyses of quality of emergency medical aid and estimation of effectiveness of hospital's and its structural subdivisions' activity.

6. The analyses of population's demand in emergency medical aid at all the levels of its organization.

7. to perform sanitary and hygienic education of population to form healthy lifestyle, provide self-aid and mutual aid and etc.

HEMA is organized in settlements with not less than 250 thousand population. The management of the hospital is performed by Head doctor.

EMA structural subdivisions:

1) administrative-managing part;

2) organizational methodic room with medical statistics office;

3) hospital: reception — diagnostics department with reference information services, specialized clinical departments of emergency aid (surgical, trauma, neurosurgery, urology, burns, gynecological, cardiology, emergency care, department of anesthesiology, intensive care, department of blood transfusion) department of physiotherapy and exercise therapy, etc.;

4) medical record;

- 5) pharmacy;
- 6) library;
- 7) nutrition unit, economic — technical part.

## **LECTURE 6**

### **MORBIDITY AND DISABILITY OF THE POPULATION**

#### ***Questions:***

1. Morbidity.
2. Disabled person, disability, activity restriction: definition, criteria, main reasons. Groups of disability at adults, characteristic.
3. Medical and social examination.
4. Extents of loss of health with children, characteristic.

#### **1. Morbidity**

Morbidity is a statistic notion. It indicates the frequency of diseases revealed and registered with population in general and with its separate groups (age, sex, territorial, professional, etc.) within the year.

One of the main preconditions for scientific studying of morbidity is specially made nomenclatures and classifications of diseases (WDC–10).

Health service in Belarus has passed to the WDC–10 since 2001.

Nowadays the following terminology concerning morbidity is used:

1. Primary morbidity — a complex of diseases revealed and registered in population for the first time in the given year.
2. Total morbidity — a complex of all diseases both revealed in the given year and registered in previous years because of which patients applied for medical aid in the given year.
3. Pathologic affection — a complex of all types of pathologic states in population revealed and registered while carrying on preventive examinations.

Morbidity is studied by 4 methods:

1. According to the data of people's applying for medical aid.
2. According to the data of medical examinations.
3. According to the data of death causes.
4. According to the data of invalidity causes.

Each method is based on its source of information, primary statistic registering document.

#### **2. Disabled person, disability, activity restriction: definition, criteria, main reasons. Groups of disability at adults, characteristic.**

An invalid (disabled person) is a person who requires social help and protection in connection with limitation of vital functions as a result of physical or mental defects.

Invalidity estimation is based on the degree of vital functions limitation and requirement of social protection.

Three degrees of vital functions limitation are distinguished: acute, significant and pronounced.

The question about invalidity determining is solved depending on the degree of vital functions limitation.

Medical assessment in the Republic of Belarus is made by MREC (medical rehabilitation expert commissions).

Medical-consulting commissions (MCC) in medical-prophylactic organizations give directions to MREC.

#### Invalidity groups

- Sharp vital functions limitation caused by the disease, trauma complications, congenital defects leading to sharply marked social desadaptation, if people with the above-mentioned impairments require constant nursing and help
- I
  - II Significant vital functions limitation with marked social desadaptation and disability to work
  - III Marked vital functions limitation, significant reduction of social adaptation abilities with significant decrease of labour activity volume, difficulty in performing professional duties

### **3. Medical and social examination.**

The main steps for medical and social examination

A citizen is sent for medical and social examination by the medical and consulting commission (advisory medical committee) of the organization of health care providing him with medical care (further — VKK).

VKK directs the citizen to medical and social examination after holding necessary diagnostic, medical and rehabilitation actions in the presence of the data confirming permanent violation of the functions of an organism caused by a disease, a consequence of a trauma or defect, and which have led to activity limitations.

At a complex assessment of various indicators characterizing violation of the main categories (criteria) of activity of the person allocate five functional classes (further — FC) to their expressiveness (as a percentage):

FC 0 — characterizes lack of violation of activity (0%);

FC 1 — easy violation (from 1 to 25 %); (reference to VKK)

FC 2 — moderately expressed violation (from 26 to 50 %); (signs of disability of the III group)

FC 3 — the expressed violation (from 51 to 75 %); (signs of disability of the II group)

FC 4 — sharply expressed violation (from 76 to 100 %). (signs of disability of the I group)

Medical and social examination

Complex assessment of the state of health, extents of limitation of activity caused by permanent disorder of functions of an organism, definition of need of the person for measures of social protection including rehabilitation.

Two criteria are core of medical and social examination: medical and social.

The medical criterion is first of all the diagnosis which has to include an etiology or a nosological form; a disease stage (at chronic processes) or the disease period (at sharp); character of a course of disease; frequency and duration of aggravations; character and degree of expressiveness of violations of functions; existence of complications and associated diseases. Also efficiency of treatment and a possibility of compensation is considered.

Social criterion — a profession and specialty of the patient, qualification degree in the profession, an experience, working conditions, age, sex, education, the residence, marital status, etc.

MREK establishes the following reasons of disability:

general disease;

disability since the childhood;

occupational disease

labor mutilation

disability since the childhood because of occupational disease;

disability since the childhood because of labor mutilation

disability since the childhood because of injuries, contusions or mutilations connected with fighting in the period of the Great Patriotic War (or with consequences of military operations)

disability since the childhood because of injuries, contusions or mutilations connected with fighting in the period of the Great Patriotic War (or with consequences of military operations)

disability since the childhood in connection with accident on the disaster at the Chernobyl nuclear power plant

military trauma

the disease got in the period of military service

disease (mutilation) caused by accident on the disaster at the Chernobyl nuclear power plant(emergencies on other atomic objects, test of nuclear weapon)

disease got at fulfillment of duties of military service in connection with accident on the disaster at the Chernobyl nuclear power plant(at emergencies on other atomic objects, test of nuclear weapon)

disability as a result of illegal actions, because of alcoholic, drug, toxic intoxication, mutilation

other reasons established by the legislation of the Republic of Belarus

Re-examination of the people which fully or partly have lost working capacity because of accident on the disaster at the Chernobyl nuclear power plant is carried out in the order established by the legislation of the Republic of Belarus.

Medical rehabilitation of disabled people — a complex of the actions directed to recovery of vital activity of the person and compensation of its functionality broken because of the postponed diseases

Social rehabilitation of disabled people — a complex of the actions directed to improvement of quality of life of disabled people by means of creating conditions for independent accommodation and integration into society

Labor rehabilitation of disabled people — the complex of the actions aimed at providing to disabled people a possibility of receiving and (or) preservation of the work suitable for them, including adaptation to work and employment of disabled people.

Professional rehabilitation of disabled people — the complex of the actions directed to complete or partial recovery of working capacity, including vocational guidance, vocational training, retraining and professional development of disabled people.

Methods of medical rehabilitation

Psychological rehabilitation — active development and maintenance of installation of the patient on rehabilitation. Making active psychological methods are widely used: training of attention, memory, reaction speed, increase of mental working capacity.

Physical rehabilitation — includes a wide range of the methods using various physical factors — a kinesis therapy, massage, a balneotherapy, a climatotherapy, acupuncture, manual therapy, a speleotherapy, hyperbaric oxygenation, etc.

Pharmacotherapy rehabilitation includes two directions.

The first direction of Pharmacotherapy rehabilitation - usage of the nonspecific activating medicines strengthening pathogenic reactions of an organism. Polyvitamins with micronutrients and amino acids, the adaptogens, anabolic means, immunomodulators, means activating the highest brain functions (nootropa), vasoprotectives, antioxidants, etc. belong to medicines of this type.

The second direction — usage of the medicines specific to each disease: sugar-lowering cure for diabetes, hypotensive — at arterial hypertension, anti-convulsive — at epilepsy, psychotropic — at mental diseases etc.

Reconstructive surgery — organ-preserving type of surgery.

Medical-technical equipments — set of the special devices allowing to carry out replacement of anatomic and functional defect or to compensate and improve abilities of an organism (criterion of activity) necessary for adaptation to the habitat.

Medico-technical equipments are divided into 5 groups:

Prosthetic and orthopedic devices.

Special vehicles.

The devices replacing household mechanisms and facilitating self-service.

The devices for hearing-impaired and for visually impaired.

Architectural and planning devices.

The Individual Program of Rehabilitation- is a list of various methods of medical, household and social character directed to achievement of a specific goal of rehabilitation of this patient or disabled person.

The purpose of the individual program of rehabilitation — formation of system of the actions providing:

Elimination of reversible functional consequences of a disease or trauma;

Physiological, psychological and technical compensation of not completely reversible or irreversible functional consequences;

Elimination or reduction of weight of household consequences due to adaptation of housing and use of the help of a family or other people;

Psychological and physiological adaptation to concrete work at the reduced functional level on condition of initial installation on work.

#### **4. Extents of loss of health with children, characteristic**

The characteristic of extents of loss of health with children:

A disabled child — a person aged up to 18 years which in connection with restriction of activity because of congenital, hereditary, acquired diseases, defects or injuries needs social help and protection.

To the children considered as disabled people the category "disabled child" of the first, second, third or fourth extent of loss of health (further SUZ) is established. When carrying out MSE at children such category as ability to the leading age activity — ability to carry out the activity determining the main content of everyday life of the child during the concrete age period is used:

- from 0 to 1 years — emotional and personal communication (with mother, the person who is carrying out leaving);
- from 1 to 3 years — subject activity;
- from 3 to 7 years — game (subject and role) activity;
- from 7 to 14 years — cognitive activity;
- from 14 to 18 years — communication, educational professional activity.

The fourth SUZ corresponds to sharply expressed activity restriction — the heaviest extent of loss of health with children, is equivalent to the first group of disability at adults.

The third SUZ corresponds to the expressed activity restriction, is equivalent to the second group of disability with adults.

The second SUZ corresponds to moderately expressed activity limitation, is equivalent to the third group of disability with adults.

The first SUZ is established in the presence of easy restriction of activity. It leads to disadaptation of the child in social environment, a delay and inadequacy of further physical, psychological, pedagogical, personal, social development. Limitation is temporary, is compensated fully or partly at a more advanced age, providing social adaptedness by 18 years, not influencing professional suitability.

Regardless of extent of loss of health with children the category «disabled child» can be determined for the term of 1 year 2 years 5 years, up to 18 years.

# LECTURE 7

## MANAGEMENT OF PUBLIC HEALTH

### *Questions:*

1. Theoretical bases of scientific management. Modern interpretation of the basic concepts and management process.
2. Levels of management in a health system.
3. Functions of management.
4. Methods of management.

### **1. Theoretical bases of scientific management. Modern interpretation of the basic concepts and management process.**

Management function of organized systems of various nature (biological, social, information, etc.), providing preservation of their certain structure, maintenance of the mode of activity, realization of their purposes and programs.

#### Basic concepts

subject of management,  
object of management,  
purpose of management,  
administrative activity.

The *subject* of management is understood as natural or legal entity from which imperious influence proceeds.

The power is an ability, an opportunity and the right to make impact on activity, behavior of collectives and separate individuals by means of various means — authority, right, coercion, violence.

#### The *object* of management

This is what imperious influence of the subject of management is directed.

Natural and legal entities, and also social and economic systems and processes can act.

#### Principle of causality

In management of systems and the separate organizations of health care the following types of the purposes are allocated:

depending on the level of management:

strategic, tactical, quick;

according to character of solvable tasks:

complex, intermediate, final;

according to contents:

medical and organizational, financial and economic, medical and technological

The main requirements are imposed in the course of definition of the purpose:

The purpose can be temporary and necessary, real and achievable, concrete and coordinated with other purposes, having quantitative or quality standard.

Administrative decisions are classified by various signs:  
on time of implementation of the decision (strategic, tactical, quick, routine);  
on extent of participation of collective, certain experts (individual, joint);  
on the content of administrative process (medical and organizational, administrative, sanitary and preventive);  
the considering styles and characterologic features of the head (intuitive, based on judgments, balanced, impulsive, inert, risky, careful, etc.).

Basic principles of management:  
principle of focus;  
principle of legal security of the administrative decision;  
the principle of a continuity in optimization of a control system;  
the principle of sufficiency in centralization and decentralization of management;  
principle of one-man management;  
principle of delegation of powers.

## **2. Levels of management in a health system:**

strategic;  
tactical;  
operational.

Strategic level — is developed to predict development of the situation, define priorities, form purposes and tasks, predict models of the result.

Tactical level bears responsibility for optimal distribution of resources according to the decision chosen at the strategic level. This level is responsible for organizing work of separate services and the organizations of health care.

Operational level provides effective implementation of the decisions made above in the divisions. Operational level is responsible for the practical organization of the decisions made at the strategic and tactical levels. At this level of management such functions as the account, analysis, control are fully implemented.

## **3. Functions of management**

The main functions of management in health care are:

predicting;  
planning;  
rationing;  
standardization;  
organization;  
coordination;  
motivation;  
marketing;  
control and account.



These functions in total make an administrative cycle.

#### **4. Methods of management**

Methods of management of health care

According to the relations of management it is possible to allocate most general methods of management:

economic, based on economic incentives;  
organizational and administrative, based on direct directions;  
social and psychological, aimed to increase social activity of people;  
heuristic, opposed to formal methods, based  
on exact mathematical models;  
ideological, etc.

Organizational and administrative methods of management are based on system:

acts of the state;  
normative documents of higher structures of management;  
the plans developed in the organization, firm, programs, tasksetc...;  
operational management.

The following four management styles are most widespread:

authoritative;  
liberal;  
democratic;  
dynamic.

Program and target method of management — a set of methods and ways of coordination of the purposes with available resources. Development of the program assumes: creation of a tree of the purposes, actions, definition of resources, comparison of alternative options and choice of the best.

The scientific organization of work — system of organization of labor processes on the basis of wide use of achievements of science and the best practices for the purpose of increase in production efficiency, growth of labor productivity, improvement of quality of production.

Main objectives of the Ministry of Public Health

1. Ensuring every possible development of public health care.
2. Ensuring free, available, qualified medical care in State Healthcare Institutions.
3. Organizing and holding actions for prevention of diseases, improving of living conditions and environment.
4. Ensuring sanitary and epidemiologic well-being of the population of Republic of Belarus.
5. Improvement of quality of the treatment-and-prophylactic help to mothers and children.

6. Preparation of medical and pharmaceutical shots, their specialization and improvement.
7. Studying of health of the population, organization of social and hygienic monitoring of his changes.
8. Coordination and control of preventive activity of public health workers.
9. Development of national programs.

## **LECTURE 8**

### **ECONOMY OF PUBLIC HEALTH. PLANNING AND FINANCING OF HEALTH CARE**

#### ***Questions:***

1. Definition of concepts of economy.
2. Economic relations.
3. Methods used in economy of health care.
4. Basic foundations in treatment and preventive care establishment.
5. Economic analysis of activity of treatment and preventive care establishments.
6. Efficiency of activity in health care.
7. Planning in health care.

#### **1. Definition of concepts of economy**

The economy is a social science which promotes the solution of the economic, social and political problems society and the person face in particular.

The economic science represents a set of several blocks of scientific knowledge and the subject matters corresponding to them:

- The block of fundamental economic sciences (general economy).
- The block of concrete economic sciences (sectoral economy).
- The block of the applied economic sciences studying economic processes, general for all branches, but not coming into force of the autonomy into a subject of the economic theory.
- The block of special economic sciences arising in connection with economy with other fields of knowledge (economic geography, economic statistics, the economic right, etc.).

The economy of health care studies develops new forms and methods of management of health care that allows to use the most effective material, personnel, financial and other resources in branch.

The economy of health care is a branch of economic science, which investigates operation of the objective economic laws, also various conditions and factors influencing the level of satisfaction of needs of the population for preservation and promotion of health.

Therefore, the economy of health care can be defined as a complex of economic knowledge of forms, methods, results of economic activity in the field of

public health care.

Subject of economy of health care are the economic relations which arise and develop among people in the process of rendering medical services.

## **2. Economic relations**

Relationship between people in professional activity can be divided into two groups: organizational-economic and social-economic.

Character of the organizational-economic relations is defined by technology of the most preventive and medical and diagnostic process, and reflects the common features inherent in all types of medical establishments.

The analysis of the social-economic relations gives the chance to reveal peculiar, special features of economic activity of the organizations of health care which act in various conditions and in various legal forms.

Both of these groups of the relations are closely interconnected, studying this relationship allows to choose optimal organizational and legal economic model of activity of a health system at a certain stage of his development.

The economic relations can be considered at four levels:

metaeconomic;

macroeconomic;

mediumeconomic;

microeconomic.

Metaeconomic (world) level.

At this level the international economic relations of health systems of various states with their integration into world economy are formed. The World Health Organization acts as the coordinator of these processes. The following problems are solved:

- development, economic justification and financing of target programs for prevention and fight against the major infectious and noninfectious diseases;
- coordination and integration in development of modern medical technologies, production of medicines and medical equipment;
- financing of carrying out medicobiological researches and training of specialists.

Macroeconomic level is an interaction of health system with other branches of national economy. At this level of the relation develops within national economy first of all in those branches which are directly connected with health care.

The following main objectives are implemented:

definition of a share of the public expenditures on health care (GDP);

development and economic justification of federal target programs in the public health care field;

development of mechanisms of ensuring balance of volumes of the state guarantees in providing free medical care to the population with financial opportunities of the state;

development and deployment of system of strategic planning and financing of health care;

development and realization of investment policy of health care;

development of the legislative base for creation of the competitive environment in the market of medical services;

development and economic justification of the program of the state guarantees rendering free medical care to citizens of Belarus.

Mediueconomic level is economic relation in the health system. At this level the following problems are developed and solved:

definition of a share of expenses on health care in the republican budget;

development and economic justification of regional target programs in the field of public health care;

formation and economic justification of territorial programs of the state guarantees of rendering free medical care to citizens of Belarus;

economic justification of need of the population of Belarus for different types of medical care and the prospects of development of network of the organizations of health care taking into account demographic features, structure and incidence of the population;

formation of the per capita standard of financing of a health system of Belarus;

improvement of funding mechanisms for the separate organizations and the health system at the regional level;

control of implementation of norms and rules of the budgetary and tax law;

analysis of economic efficiency of use of resources of health care;

creation of monitoring of financial and economic activity of a health system.

Microeconomic (establishment) level covers activity of each separate treatment and prevention facility, structural divisions.

At this level the following tasks are implemented:

the analysis of economic efficiency of using resources in the separate organization of health care;

maintaining the accounting, tax and statistical accounting;

realization of system of the state orders and contracts for rendering free medical care to the population;

attraction of additional (off-budget) resources for financing of the organizations of health care;

formation of the budget of the organizations of health care.

Actually problems of these four levels are closely connected and are solved, as a rule, in complex.

### **3. Methods used in economy in health care**

Methods in health care economy:

mathematical-statistical

analysis and synthesis

balance  
predicting  
economic-mathematical modeling  
economic experiment

Mathematical-statistical methods help to open quantitative interrelation between the phenomena. Opening quantitative changes of processes, the economy of health care investigates transition of quantitative indices to new quality of the provided medical care and to qualitatively new level of health.

Analysis and synthesis. In the course of the analysis there is a partition of the studied phenomenon on his components. Synthesis provides integration of the obtained data with the purpose of detection of the most essential regularities.

The balance method represents a set of methods of economic calculations. This method is used for establishment of strictly certain quantitative ratio between process components. The scheme of economic balances is based on the principle of equality of sizes: resources and opportunities of their use taking into account creation of reserves.

Economic-mathematical modeling — reproduction of economic objects and processes in small, experimental forms. In economy of mathematical modeling, by means of the description of economic processes is more often used by mathematical dependences. The model of an economic object is, as a rule, supported by real statistical data that allows to build forecasts and to carry out objective estimates.

Predicting represents scientific anticipation of the most probable changes of a condition of branch of health care. Creation of probabilistic predictions of development of branch has to be corresponded to predictions of change of the state of health of the population.

Economic experiment provides search of these or those methods of increase in efficiency of activity of a health system on the example of several regions or separate medical establishments.

Indices in public health:

Size of population.

Birth rate.

Death rate.

Structure of morbidity. Studying of structure of morbidity depending on sex and age of patients allows to distribute economically effectively limited material and financial resources, to organize training — general and specialized profiles.

Basis of successful activity of treatment and preventive care establishment is the choice of the most effective methods of planning and managing in relation to many components of medical activity including economic resources from which main things are fixed assets.

#### **4. Basic foundations in treatment and preventive care establishment**

Basic foundations in treatment and preventive care establishment is material ba-

sis of his functioning. Their structure can be active and passive.

Passive part — 75 % of the building, constructions, transfer devices.

Active — 25 % devices, devices, medical equipment.

The management of Basic foundations in treatment and preventive care establishment assumes realization of a complex of measures, the business and non-productive assets directed to reproduction according to criteria of economic efficiency expressed by indicators of basic foundations.

## **5. Economic analysis of activity of treatment and preventive care establishments**

Economic analysis of activity of treatment and preventive care establishments.

The economic analysis in health care is a set of methods of formation and data processing about production and financial activity of treatment and preventive care establishments and their divisions allowing to provide a reliable assessment of results of their activity, revealing ways of rationalization of use of resources.

Feature of the economic analysis means results of actions of all functions of management estimated. Thanks to it an opportunity to develop the administrative decision — the planned, organizational and other administrative acts promoting transfer of activity of treatment and preventive care establishment to higher level of development is given.

Tasks of the economic analysis:

Detection of requirement of society for services of treatment and preventive care establishment in necessary volume. The economic analysis supports organizational actions with economic calculations, allows to reveal factors which can exert impact on her.

Studying of completeness of satisfaction of requirement of society for services of institutions and verification of the established standards.

Assessment of efficiency of use of resources.

Identification and measurement of factors of deviations of the actual indicators of economic activity of LPO from standard and definition of reserves.

Control of implementing of the principles of financing of the budgetary of treatment and preventive care establishment .

Preparation of analytical information for the choice of optimal administrative solutions.

Types of the economic analysis

On the content of management process: current, quick, perspective.

On completeness of coverage: full, local, thematic.

On frequency of carrying out — systematic, single.

By methods of studying of objects — complex, continuous, selective.

On orientation:

— external analysis: estimates profitability of treatment and preventive care establishment, intensity of use of its financial means in general. On the basis of external analysis of relationship of a health care facility with shareholders, creditors and tax authorities is defined;

— internal analysis: the mechanism of achievement of economic results is considered. In the course of this analysis formation of profit of treatment and preventive care establishment, structure of the rendered services, character and reasons for rejection of service prices from planned is traced.

Directions of economic analysis of treatment and preventive care establishment:

- usage of fixed assets;
- usage of bed fund;
- usage of medical equipment;
- usage of personnel;
- analysis of financial expenses.

## **6. Efficiency of activity in health care**

Efficiency of activity in health care is the degree of effectiveness of the measures which are held in health system is determined by comparison of the resources spent for their carrying out and the received results.

Main aspects of efficiency:

- medical;
- social;
- economic.

Medical efficiency — set of results of treatment and prevention as a result of which patient's condition improves. The medical effect is defined by decrease in morbidity, increase in level of quality of medical services, decrease in a lethality, etc.

Social efficiency — set of result of activity of health care on strengthening of health of the population measured by decrease in disability, life expectancy growth, increase of the period of working capacity, increase of birth rate, increase of a natural increase of the population. Social efficiency of health care is connected with quality of medical care and satisfaction of needs of the population for services of medical appointment and health that promotes improvement of quality of life of the population in general.

Economic efficiency is integrated, reflecting a direct and indirect positive contribution of health care to the national economy. Economic effect of health care is measured in monetary units. At the state level it develops from:

- GDP is gained due to decrease of incidence with temporary disability;
- increases in volume of additionally made production;
- increases in number of working days and potential number of a manpower;
- reductions of costs of health care;
- economy of means on payment of grants of social insurance and social security.

At the level of branch economic effect is expressed in decrease in costs of services of medical appointment.

At the level of separate treatment and preventive care establishments — in reduction of cost of one case

Effectiveness is also distinguished:

Absolute effectiveness is defined by a regulation received by absolute social and social-economic effects with all sum of the expenses connected with their receiving.

Comparative efficiency aiming at the choice of the most effective social and social-economic options is determined by comparison of options by a difference of the given expenses.

## **7. Planning in health care**

Planning in health care is purposeful activity of public authorities of management of health care, the organizations of health care of all forms of ownership for development of prospects of development of health systems of the country, certain administrative territories and the organizations of health care.

Ensuring compliance between volumes of the medical care provided to the population and the sizes of the resources necessary for performance of these volumes must become the basic principle of planning in health care

Main types of planning in health care

In public health and health care the following types of planning are distinguished:

- strategic;
- perspective;
- current.

Strategic planning. The main document in which the principles of strategic planning of development of health care are reflected in Belarus is the Concept of development of health care of the Republic of Belarus for 2003–2007.

Strategic planning defines the purposes, tasks, priorities, orders and conditions of activity of health care on prospect.

Strategic planning is carried out at two levels:

- republican;
- regional.

Strategic planning at the republican level.

By the Ministry of Health of the Republic of Belarus the following principles are developed and approved in accordance with the established procedure:

- strategic objectives, tasks and priorities of development of health care of the Republic of Belarus;
- the predicted indicators of the state of health of the population and activity of system health care;
- republican norms, standards, social standards, technique of their adaptation to conditions of subjects of the Republic of Belarus;



— the republican, target medical and social programs providing achievements of strategic objectives and tasks;

— methodology of planning of investments, assessment of their efficiency, order of coordination of investment projects of health care.

Strategic planning at the regional level.

Strategic task of regional governing bodies of health care is development of plans and programs of formation of effective system of rendering available medical care to the population of the territory for prospect.

In the course of planning the following tasks have to be solved:

— the analysis is made and the forecast of the state of health of the population of the territory for planning period is developed;

— the analysis of a condition of a health system of area, compliance to her requirements of republican level is made;

— the purposes, tasks and priorities of development of health care to planning period are established;

— the norms and standards applied when planning a health system are approved;

— strategic indicators of the state of health of the population and activity of health care of area are defined;

— resources health systems of area, necessary for development, and sources of their receiving are defined;

— the complex of plans and target programs of the strategic objectives and problems of development of a health system providing realization is accepted;

— parameters for planning of health care of area are set.

Advance planning provides development of plans and programs of development of health care of the Republic of Belarus for 3–5 years and is a part of strategic planning. A part of advance planning is program and target planning.

Program and target planning is one of the main organizational technology, designed to solve prior problems facing country health care. It plays an essential role and in the organization of activities for public health care.

Such target approach allows to concentrate on the conditions of deficiency of financial, material and other resources on the most prior directions of development of health care, achieving thereby the maximum results in the shortest time. Besides, development and implementation of comprehensive target medical and social programs is one of the perspective directions of improvement of management of health care and as result of it is improvement of quality of medical care as prior problem of health care.

Program and target planning of health care allows:

— to control purposeful and effective use of the allocated allocations and performance of the planned actions;

— it is more rational to distribute health care resources on the basis of re-organization of the medical and sanitary help and introduction of resource-saving technologies;

— to considerably increase quality, efficiency and availability of medical care (prevention and diagnosis of diseases, medical and rehabilitation actions), and also to reduce the need for stationary medical care and it is more rational to use bed fund;

— to strengthen material and technical resources of the organizations of health care the latest medical equipment for rendering the short-term, emergency help;

— to increase availability of the qualified medical care to women and children and, first of all, inhabitants of rural areas;

— to increase medical and social security of patients and to increase the responsibility of health of workers for health of the population.

The complex of program actions promotes modernization of a health system of the Republic of Belarus for the purpose of creating of optimal model of health care, to satisfy needs of the population, branch and state.

Approximate structure of target programs:

— name of the program;

— justification of the program;

— customer of the program;

— head of the program;

— main developers of the program;

— program purpose;

— list of the main actions (tasks) of the program;

— terms and stages of implementation of the program;

— main performers of the program;

— volumes and sources of financing of the program;

— the expected end results of implementation of the program;

— organization of control of execution of the program.

Routine planning provides development of annual plans and programs of activity of a health system and it is a component of long-term plans.

the territorial program represents a package of the documents defining the list of types, volumes, conditions of granting and financing of the medical care provided by budget funds.

Main objectives of the territorial program:

— consolidation of the state sources of financing for providing the population with the guaranteed (free) medical care;

— ensuring balance of obligations of the state for providing free medical care to the population and the financial means allocated for this purpose;

— increase in efficiency of usage of the available health care resources.

Basic principles of formation of the territorial program:

— justification of need of the population of the territory for medical care, proceeding from features of demographic structure, levels and structure of incidence of the population;

— ensuring compliance of the guaranteed volumes of medical care to standards and standards of delivery of health care provided by the Program;

- scientific justification of necessary material and financial inputs per the corresponding unit of volume of medical care;
- ensuring balance of volumes, structures of the guaranteed medical care and financial means, necessary for her realization;
- increase in efficiency of use of resource base of health care due to optimization of structure and power of territorial network of healthcare institutions and introduction of resource-saving medical technologies.

Besides, allocate:

directive;

indicative;

contractual;

enterprise planning of health care.

Directive planning is carried out by means of establishment of address tasks and distribution of resources, necessary for their performance. The main levers of directive planning are the budgetary financing, limits of capital investments, funds of material resources, the state orders. The directivity of planning is shown in investment of plans with force of the document, obligatory for all performers.

Indicative planning is one of forms of involvement of the organizations of health care (irrespective of forms of ownership) in development on a parity basis with public authority of management of health care of plans and programs of development. As a rule, indicative plans are developed on the basis of priorities, one of which is defined by public authorities of management of health care.

Contractual planning governs the commercial relations between the organizations of health care, other enterprises and associations, governing bodies and other subjects of the market which are under construction on a voluntary and mutually advantageous basis. Contractual plans are implemented in the form of agreements, contracts, contracts for delivery of medicines, products of clinical nutrition, material resources, etc.

Enterprise planning is function of management of the organization of health care (any form of ownership) directed to justification and the choice of ways of effective development within business activity (rendering paid medical services, participation in programs of voluntary health insurance, granting rooms for rent and other activity which isn't forbidden by the legislation). The basis is made by the internal office plans of various urgency designed to solve operational, current and strategic problems.

Planning methods.

The standard method is applied to calculation of expected and planned targets. Norms and standards are developed and approved, as a rule, by MZ RB or other authorized bodies of executive power.

The balance method is one of the main methods of planning and has universal value as the way allowing to coordinate needs of the population for these

or those types of medical care to their resource providing. By means of a balance method disproportions in development of separate types of medical care, for example out-patient and polyclinic and stationary are opened, necessary ratios between sections and indicators of a comprehensive plan of development of health care are proved, reserves come to light, macroeconomic balance of health care with other branches is established.

## LITERATURE

### *Основная:*

1. Здоровоохранение Республики Беларусь: прошлое, настоящее, будущее / В. И. Жарко [и др.]. — Минск: Минсктиппроект, 2012. — 320 с.
2. Общественное здоровье и здравоохранение: учебник: в 2 ч. / И. А. Наумов [и др.]; под ред. И. А. Наумова. — Минск: Выш. шк., 2013. — Ч. 1. — 335 с.
3. Общественное здоровье и здравоохранение: учебник: в 2 ч. / И. А. Наумов [и др.]; под ред. И. А. Наумова. — Минск: Выш. шк., 2013. — Ч. 2. — 351 с.
4. Общественное здоровье и здравоохранение: учеб. пособие / Н. Н. Пилипцевич [и др.]; под ред. Н. Н. Пилипцевича. — Минск: Новое знание, 2015. — 784 с.

### *Дополнительная:*

5. *Glushanko, V. S.* Public health and health care services: The lectures-presentations, the computer tests and the practical skills for the students of the

faculties of preparation of foreign citizens with the Russian and English languages training: educational supply) / V. S. Glushanko, T. V. Kolosova, A. P. Timofeeva. — Vitebsk: VSMU, 2008. — 442 p.

6. Анализ деятельности организаций здравоохранения службы охраны здоровья матери и ребенка: учеб.-метод. пособие / В. С. Глушанко [и др.]. — Витебск: ВГМУ, 2010. — 238 с.

7. *Глушанко, В. С.* Общественное здоровье и здравоохранение / В. С. Глушанко. — Витебск: ВГМУ, 2011. — 491 с.

8. *Глушанко, В. С.* Организация деятельности службы государственного санитарного надзора: учеб.-метод. пособие для студентов мед. вузов / В. С. Глушанко, А. П. Тимофеева, А. П. Грузневич; под ред. В. С. Глушанко. — Витебск: ВГМУ, 2013. — 144 с.

9. Основы медицинской статистики: учеб.-метод. пособие: для студентов вузов / В. С. Глушанко [и др.]. — Витебск: ВГМУ, 2012. — 154 с.

10. История здравоохранения Беларуси / сост. В. И. Жарко [и др.]. — Минск: Респ. науч. мед. б-ка, 2009. — 368 с.

11. *Косинец, А. Н.* Организационные технологии в системе здравоохранения XXI века: монография / А. Н. Косинец, В. С. Глушанко; под ред. А. Н. Косинца, В. С. Глушанко. — Витебск: РИПЦ ВГМУ, 2006. — 328 с.

12. Международная статистическая классификация болезней и проблем, связанных со здоровьем. Десятый пересмотр (МКБ-10): Краткий вариант. — Минск: Асар, 2001. — 400 с.

13. Общественное здоровье и здравоохранение: организация лечебно-профилактической помощи населению: учеб. пособие / Р. А. Часнойть [и др.]. — Гродно: ГрГМУ, 2009. — 251 с.

14. *Лисицын, Ю. П.* Общественное здоровье и здравоохранение: учебник / Ю. П. Лисицын, Г. Э. Улумбекова. — 3-е изд., перераб. и доп. — М.: ГЭОТАР-Медиа, 2011. — 544 с.

15. Общественное здоровье и здравоохранение, экономика здравоохранения: учебник: в 2 т. / под ред. В. З. Кучеренко. — М.: ГЭОТАР-Медиа, 2013. — Т. 1. — 688 с.

16. Общественное здоровье и здравоохранение, экономика здравоохранения: учебник: в 2 т. / под ред. В. З. Кучеренко. — М.: ГЭОТАР-Медиа, 2013. — Т. 2. — 160 с.

17. Общественное здоровье и здравоохранение: основы экономики, финансирования и управления: учеб. пособие / Р. А. Часнойть [и др.]. — Гродно: ГрГМУ, 2008. — 252 с.

18. Общественное здоровье и здравоохранение: учебник / В. А. Медик, В. К. Юрьев. — 3-е изд., перераб. и доп. — М.: ГЭОТАР-Медиа, 2012. — 288 с.

19. Планирование, финансирование и ценообразование в здравоохранении: учеб.-метод. пособие / Е. М. Ткачева [и др.]; под ред. В. С. Глушанко. — Витебск, 2011. — 217 с.

20. *Медик, В. А.* Статистика здоровья населения и здравоохранения: учеб. пособие / В. А. Медик, М. С. Токмачев. — М.: Финансы и статистика, 2009. — 368 с.

21. *Сурмач, М. Ю.* Менеджмент в здравоохранении: учеб. пособие / М. Ю. Сурмач, Е. М. Тищенко. — Гродно: ГрГМУ, 2007. — 284 с.

22. Планирование, финансирование и ценообразование в здравоохранении: учеб.-метод., пособие / Е. И. Ткачева [и др.]; под ред. В. П. Дейкало. — Витебск: ВГМУ, 2011. — 217 с.

23. *Тищенко, Е. М.* Общественное здоровье и здравоохранение: пособие для студентов лечебного факультета [Электронный ресурс] / Е. М. Тищенко. — Гродно: ГрГМУ, 2014.

24. Экономика здравоохранения: учеб. пособие / под ред. А. В. Решетникова. — 2-е изд. — М.: ГЭОТАР-Медиа, 2010. — 272 с.

**Учебное издание**

**Шаршакова** Тамара Михайловна  
**Бараш** Алиса Николаевна

**КУРС ЛЕКЦИЙ ПО ДИСЦИПЛИНЕ**  
**«ОБЩЕСТВЕННОЕ ЗДОРОВЬЕ И ЗДРАВООХРАНЕНИЕ»**  
(на английском языке)

**Учебно-методическое пособие**  
**для студентов 4–6 курсов**  
**и факультета по подготовке специалистов для зарубежных стран**  
**медицинских вузов**

Редактор *Т. М. Кожемякина*  
Компьютерная верстка *Ж. И. Цырыкова*

Подписано в печать 13.10.2017.  
Формат 60×84<sup>1</sup>/<sub>16</sub>. Бумага офсетная 80 г/м<sup>2</sup>. Гарнитура «Таймс».  
Усл. печ. л. 4,65. Уч.-изд. л. 5,08. Тираж 180 экз. Заказ № 497.

Издатель и полиграфическое исполнение:  
учреждение образования «Гомельский государственный медицинский университет».  
Свидетельство о государственной регистрации издателя,  
изготовителя, распространителя печатных изданий № 1/46 от 03.10.2013.  
Ул. Ланге, 5, 246000, Гомель