ODESSA NATIONAL MEDICAL UNIVERSITY
Department of social medicine, medical law and management

Discipline:
"HEALTH ECONOMICS"

METHODOLOGICAL RECOMMENDATIONS

For specialty 7. 12010005 – "Stomatology"

For the students of the 5th course
Faculty of stomatology

Former: PhD in Economics, senior lecturer
Borshch V. I.

Approved at
methodological meeting of the department
« »_____ 20__.
Protocol № ___.

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Odessa – 2017

Content

Introduction

Reformation of healthcare sector of Ukraine supposes the formation of new "generation" of medical personnel. It considers as the urgent objective training of high-qualified medical staff. This supposes not only qualitative professional education, but formation of their capability to implement principles of health economics, management and marketing sciences to the medical organization's activity, to solve financial, economic and administrative tasks. Working-out of such skills of medical personnel is directed to healthcare system's efficiency increasing.

Thus, the main goal of these methodological recommendations is to form the economic thinking of medical students. As a result of studying recommendations students will acknowledge with main economic laws, mechanisms and categories of health care; they will receive theoretical and practical knowledge in marketing and management of health care. Recommendations are directed at the knowledge and practical skills obtaining, which are necessary for effective managerial decisions process realizing in healthcare field.

A perfect study of the discipline will enable students to master the general laws, principles of formation and development of the economic, marketing and management system of the medical organization's activities.

"Health Economics" as an academic discipline:

1) bases on students' studying of such academic discipline as history of medicine, sociology and medical sociology, hygiene and ecology, biostatistics, informatics, ethics, basic of the economic theories;

2) integrates with above mentioned disciplines and further with clinical and hygienic disciplines;

3) provides study of the legal, institutional and economic foundations of the health economics sphere;

4) forms bases for the diagnostic and treatment studying process, and also for its size and quality appraisement during the clinical disciplines studying;

5) promotes the formation of the preventive direction of future doctors' activity considering the possible impact on the health of the different factors while the development of complex medical and social events;

6) specifies the methods and means of healthy lifestyles promotion;

7) forms bases for organizing and carrying out medical and pharmaceutical companies' economic and financial analysis;

8) promotes students' of the higher educational institutions economic thinking;

9) provides the managerial decision making process to meet the peoples' needs in the health care by means of economics, marketing and management.

Methodological recommendations are written in accordance with Syllabus of "Health economics" for higher medical establishments of Ukraine of III-IV accreditation levels; typical program of Ministry of Health of Ukraine on the subject "Health Economics", approved by the Ministry of Education; and in accordance with the industry standard of education of Ukraine.

Structure of academic discipline

№	Theme	Lection	Seminars	Practical classes	ISW
	Content issue 1. **Theoretical and organizational basis of health economics**				
T.1.	Theoretical basics of health economics	2			
T.2.	Improvement ways of economic mechanism in accordance with National reformation strategy of healthcare system		2		2
T.3.	Features of the healthcare system's state regulation. Planning methods in the healthcare system. Calculation of the annual amount of budget allocations for health care by districts			2	1
	Content issue 2. **Healthcare services market and its research methods**				
T.4.	Market of healthcare services. Marketing and marketing strategy	2			
T.5.	Healthcare market research methods. Organization of marketing activity in stomatology		2		2
T.6.	Pricing of the medical and stomatological services. Calculation of the cost of medical services on a commercial basis			2	1
	Content issue 3. **Organization and content of financial management in the healthcare system and stomatology**				
T.7.	Financing of healthcare system: its essence, sources and features. Calculation of the cost savings' possibility in the process of outpatient and polyclinic care providing to the population		2		2
	Content issue 4. **Health insurance as the mechanism of healthcare system funding**				
T.8.	Basics of health insurance	2			
T.9.	Procedures of insurance tariff determination for voluntary health insurance			2	1
	Content issue 5. **Medical organization's efficiency analysis and appraisement**				
T.10	Business activity in health care and stomatology	2			
T.11.	Methodology of business plan formation for the organization of entrepreneurial activity in the healthcare field		2		2
T.12.	Appraisement procedures of medical, social and economic effectiveness in healthcare system			2	1
T.13.	Economic activity in healthcare field and stomatology	2			
T.14.	Medical organizations' activity, their effectiveness and ways of its improvement		2		2
T.15.	Procedures of case-study as the form of practical skills mastering			2	1
	Control method of the discipline	**Test control**			
	Total – 45 hours	**10**	**10**	**10**	**15**
	ECTS credits– 1, 5	**0,34**	**0,33**	**0,33**	**0,5**

Theme methodological guidelines for the lectures, practical classes and seminars

Content issue 1. Theoretical and organizational basis of health economics

Theme 1. Theoretical basics of health economics

The studies' form is **lecture**, limited to 2 hours.

I. Actuality

The development of the medical services sphere has led to the emergence of the need to study the peculiarities of general scientific economic laws' action, the laws of production and medical services' use in order to develop effective state strategies for planning and rational use of resources in the medical sector.

II. The purpose of the lecture is to familiarize students with the preconditions of the formation and the basic concepts of Health economics.

III. Lecture plan

1. Health care as a branch of the national economy. The subject of health economics. Research methodology.
2. Economic problems of health care development in a market economy. Main directions of health care reforms in Ukraine.
3. Health as an economic category.
4. Costs of health care in different countries of the world.

IV. Theme methodology guidelines

Health economics is a field of economic science. Health economics lies at the interface of economics and medicine and applies the discipline of economics to the topic of health. Traditionally, Health economics is refers to the non-productive economic activity. It is a complex of economic knowledge about the forms, methods and results of economic activities in medicine. Health economics studies economic relations between people during medical care, organization management and development of these processes; a rational use of social limited resources for medical services; production, distribution, exchanging and purchasing of medical goods and services to the patients.

The subject of Health economics is the economic relations and laws, which objectively developed between people during delivery of health care, i.e. medical professional activity.

These economic relations can be divided into two groups:

1) Organizational relations, which are determined by the technology of medioprophylactic process. These relations represent common features of medical establishments (e.g. financing system of medical establishment of different types);

2) Social relations determine particular features of medical establishments' economic activities (e.g. patterns of ownership, amount and order of payroll, so on).

Research methods of Health economics are traditional logical methods (such as analysis and synthesis, deduction and induction, scientific abstraction, experiment, so on), economic and mathematical modeling, statistical methods, and social methods.

Among the main tasks of Health economics consider:

1) correct determination and rational use of economic resources in the medical sphere;

2) determination of medical service investors;

3) determination of resource capability (material, labor and financial) and analysis of resource exploitation effectiveness in the medical field;

4) research of socioeconomic questions concerned with payroll of medical employee and labor norms setting in health care;

5) research of an activity effectiveness in health care and ways of economic effectiveness achievement determination;

6) determination of managerial methods and principles of economic process in health care.

So, health economics is the study of distribution of health care. It is a branch of economics concerned with issues related to efficiency, effectiveness, value and behavior in the production and consumption of health and health care.

One of the most important categories of economics is a good. A good is a benefit satisfying a person's need. In health economics health and medical care is considered as economic goods.

According to World Health Organization's constitution (WHO) *health* is "a state of complete physical, mental and social well being and not merely the absence of disease of infirmity". Health is the highest value for society and individual (a social category), the special consumer's cost which requires financial contributions and material resources for strengthening and recovery (an economic category).

The human right to health means that everyone has the right to the highest attainable standard of physical and mental health, which includes access to all medical services, sanitation, adequate food, decent housing, healthy working conditions, and a clean environment.

Health is considered with condition of a permanent risk. Health loss caused by a disease or an injury becomes a hard load not only for the person, but for his family and society.

Economic losses caused by a disease or an injury are next (1) untimely death; (2) reduction of active life period; (3) costs for outpatient and inpatient treatment; (4) payments for temporary loss of capacity to labour; (5) decrease of work production, labour supply and national income; (6) decrease of individual prosperity in account of wages decrease; (7) denial from business activity and scientific researches; (8) limitation of finances for accumulation and investment into education and professional development for business activity.

Health as an economic category has next features (1) the availability of consumer cost (a person's basic need); (2) the lack of exchange cost (it couldn't be purchased or sale); (3) it is a prognostic factor of the following economic development; (4) it is a result of spent efforts and investments; (5) it is one of the main factors of state human capital (human capital is the collective skills, knowledge, or other intangible assets of individuals that can be used to create economic value for the individuals, their employers, or their community).

Health is a relative state in which one is able to function well physically, mentally, socially, and spiritually in order to express the full range of one's unique potentialities within the environment in which one is living. In the words of René Dubos, "health is primarily a measure of each person's ability to do and become what he wants to become." a relative state in which one is able to function well physically, mentally, socially, and spiritually in order to express the full range of one's unique potentialities within the environment in which one is living.

Health care is a system of state, social and individual measures taken to health. Health care is the maintenance or improvement of health via the diagnosis, treatment, and prevention of disease, illness, injury, and other physical and mental impairments in human beings. Health care is delivered by health professionals (providers or practitioners) in allied health professions, chiropractic, physicians, physician associates, dentistry, midwifery, nursing, medicine, optometry, pharmacy, psychology, and other health professions. It includes the work done in providing primary care, secondary care, and tertiary care, as well as in public health.

The human right to health care means that hospitals, clinics, medicines, and doctors' services must be accessible, available, acceptable, and of good quality for everyone, on an equitable basis, where and when needed.

Health care system is used to refer to the system or program by which health care is made available to the population and financed by government, private enterprise, or both. In a larger sense, the elements of a health care system embrace the following: (1) personal health care services for individuals and families, available at hospitals, clinics, neighborhood centers, and similar agencies, in physicians' offices, and in the clients' own homes; (2) the public health services needed to maintain a healthy environment, such as control of water and food supplies, regulation of drugs, and safety regulations intended to protect a given population; (3) teaching and research activities related to the prevention, detection, and treatment of disease; and (4) third

party (health insurance) coverage of system services. It is the complete network of agencies, facilities, and all providers of health care in a specified geographic area. Nursing services are integral to all levels and patterns of care, and nurses form the largest number of providers in a health care system.

Medical aid is professional treatment for illness or injury.

Medical service is an attendance, examination or treatment of any kind by a medical practitioner, registered dentist, registered optometrist, registered physiotherapist, registered chiropractor and osteopath or registered podiatrist. *Healthcare services* means any medical or remedial care or service, including supplies delivered in connection with the care or service, that is recognized under state law. It involves the furnishing of medicine, medical or surgical treatment, nursing, hospital service, dental service, optometrical service, complementary health services or any or all of the enumerated services or any other necessary services of like character, whether or not contingent upon sickness or personal injury, as well as the furnishing to any person of any and all other services and goods for the purpose of preventing, alleviating, curing or healing human illness, physical disability or injury.

V. Exercises

1. What does health economics mean to you? (Write a short paragraph).
2. Write down some specific topics or headings which you associate with the subject of Health Economics.
3. What is the human right to health and health care? (Describe principles and legal basis).
4. Identify as many distinct, and potentially causal, relationships as you can between health, health care and economic performance.
5. Describe health care system of your country.
6. Make a report on the following topics:
   1) The formation of Health Economics as a science
   2) Health Economics as the sector of the national economics
   3) Research methodology of Health Economics
   4) Health Economics role at the society's productive powers reproduction processes
   5) Features and a mechanism of economic laws in Health Care System
   6) Health Economics development problems in the market conditions
   7) Health and Health care
   8) Modern conception of Health care system's reformation.

Theme 2. Improvement ways of economic mechanism in accordance with National reformation strategy of healthcare system

The studies' form is **seminar**, limited to 2 hours.

I. Actuality

Nowadays, the health care system in Ukraine urgently needs consistent and profound institutional and structural reforms aimed at population's health improving and meeting its medical care needs.

Mastering of the healthcare economics foundations by practical medical service providers, i.e. health professionals of different profiles and levels (doctors, nurses, etc.) and students of higher and secondary medical institutions is extremely important to succeed in reforms' advancing.

II. The purposes of the seminar

Students must *know*:

1) theoretical basics of health economics;
2) main directions of health care reformation in Ukraine;
3) basic principles of health care reformation;
4) ways of economic mechanism's improvement.

Students must *be able*:

1) to ground economical development of health economics;
2) to analyze the modern state of health care;
3) to define effective and up-to-date medical technologies.

III. 2 hours are allocated for the **Individual Students' Work (ISW).**

Questions for self-control and discussing

1. Reformation tendencies of Ukrainian healthcare system
2. World healthcare system
3. Healthcare system of the industrialized countries (Choose the country/their group by your own)
4. Healthcare system of developing countries (Choose the country/their group by your own)
5. Healthcare system of undeveloped countries (Choose the country/their group by your own)

IV. Theme methodology guidelines

WHO defines the spectrum of health care as encompassing of six levels.

The first level of care is *preventive care*, which is primarily provided by school health education courses and community and public health services.

Primary care is the usual point at which an individual enters the healthcare system. Its major task is the early detection and prevention of disease and the maintenance of health. This level of care also encompasses the routine care of individuals with common health problems and chronic illnesses that can be managed in the home or through periodic visits to an outpatient facility. Providers of care at the primary level include family members as well as the professionals and paraprofessionals who staff community and neighborhood health centers, hospital outpatient departments, physicians' offices, industrial health units, and school and college health units.

Secondary or *acute care* is concerned with emergency treatment and critical care involving intense and elaborate measures for the diagnosis and treatment of a specified range of illness or pathology. Entry into the system at this level is either by direct admission to a health care facility or by referral. Provider groups for secondary care include both acute- and long-term care hospitals and their staffs.

Tertiary care includes highly technical services for the treatment of individuals and families with complex or complicated health needs. Providers of tertiary care are health professionals who are specialists in a particular clinical area and are competent to work in such specialty agencies as psychiatric hospitals and clinics, chronic disease centers, and the highly specialized units of general hospitals; for example, a coronary care unit. Entry into the health care system at this level is gained by referral from either the primary or secondary level.

Respite care is that provided by an agency or institution for long-term care patients on a short-term basis to give the primary caretaker(s) at home a period of relief.

Restorative care comprises routine follow-up care and rehabilitation in such facilities as nursing homes, halfway houses, inpatient facilities for alcohol and drug abusers, and in the homes of patients served by home health care units of hospitals or community-based agencies.

Continuing care is provided on an ongoing basis to support those persons who are physically or mentally handicapped, elderly and suffering from a chronic and incapacitating illness, mentally retarded, or otherwise unable to cope unassisted with daily living. Such care is available in personal care homes, domiciliary homes, inpatient health facilities, nursing homes, geriatric day care centers, and various other types of facilities.

Other sub-systems of health care are the following:

Holistic health a system of preventive care that takes into account the whole individual, one's own responsibility for one's well-being, and the total influences – social, psychological, environmental – that affect health, including nutrition, exercise, and mental relaxation.

Emergency Medical Services (EMS) system a comprehensive program designed to provide services to the patient in the prehospital setting. The system is activated when a call is

made to the EMS operator, who then dispatches an ambulance to the patient. The patient receives critical interventions and is stabilized at the scene. A communication system allows the health care workers at the scene to contact a trauma center for information regarding further treatment and disposition of the patient, followed by transportation of the patient to the most appropriate facility for treatment.

Mental care helps when patients need help with a mental illness or emotional crisis. Mental health treatment may include medication, psychotherapy ("talk therapy") or both. Mental health professionals include psychiatrists, counselors or psychologists.

Healthcare system includes: (1) hospital system, (2) types of patient care, and (3) public health programs.

A hospital system is a group of hospitals or facilities that work together to deliver services to their communities. Different types of hospital systems have different types of ownership and financial goals. Types of hospital systems include:

– Public hospitals are funded and owned by local, state or federal governments and receives money from the government. Some public hospitals are associated with medical schools.

– Non-profit hospitals are often community hospitals and may be linked with a religious denomination. The main goal of a non-profit hospital is to provide service to the community.

– Private hospitals are owned by investors. Their goal is to earn a profit. Private hospitals tend to offer more profitable services such as rehabilitation, elective or plastic surgery or cardiology. They try to avoid unprofitable services such as emergency medicine, which can lose money due to uninsured patients.

V. Exercises

1. What kind of country is yours (developed, developing or undeveloped)? What are the features of the healthcare system of such group of countries? What are the features of healthcare system of your country? (Write a short paragraph).
2. Describe the main trends of healthcare system's reformation of your country. Write an essay (min 3 pages).
3. Describe the main trends of healthcare system's reformation of Ukraine. Write an essay (min 3 pages).

Theme 3. Features of the healthcare system's state regulation. Planning methods in the healthcare system. Calculation of the annual amount of budget allocations for health care by districts

The studies' form is **practical classes**, limited to 2 hours.

I. Actuality

Planning plays a critical role in the activity of all healthcare organizations. In fact, one could argue (and usually win) that planning is the most important of administrative and finance related tasks. Planning encompasses the overall process of preparing for the future. Because of its importance to organizational success, most health services managers, especially at large organizations, spend a great deal of time on activities related to it.

This theme introduces students the planning process and shows, how planning is used within healthcare organizations. In particular, the practical class focuses on how managers can use variance of pans to help exercise control over current healthcare organization's operations.

II. The purposes of the practical classes

Students must *know*:

1) nature and principles of planning in healthcare field;
2) types of planning;
3) methods of planning;
4) planning of healthcare volume and staff;

5) essence of the state regulation in the healthcare system;
6) functions of the state regulation in the health care;
7) essence of development strategy of health care.

III. 1 hour is allocated for the **Individual Students' Work (ISW).**

Questions for self-control and discussing

1. Planning in the healthcare field
2. Types and methods of planning
3. Strategic planning process
4. SWOT analysis
5. PEST analysis
6. Personnel planning in health care
7. Planning of medical care volume

IV. Theme methodology guidelines

Planning is a basic management function involving formulation of one or more detailed plans to achieve optimum balance of needs or demands with the available resources. The planning process (1) identifies the goals or objectives to be achieved, (2) formulates strategies to achieve them, (3) arranges or creates the means required, and (4) implements, directs, and monitors all steps in their proper sequence. *A plan* is a written account of intended future course of action (scheme) aimed at achieving specific goal(s) or objective(s) within a specific timeframe. It explains in detail what needs to be done, when, how, and by whom, and often includes best case, expected case, and worst case scenarios.

Classification of planning:

– by level: (1) state, (2) regional, and (3) organizational;

– by period: (1) strategic (long-run), (2) tactic or current (middle-run), and (3) operative (short-run);

– by influence upon a management object: (1) directive (approve of state tasks and necessary resources; it provides necessity of the plan's carrying out for executors); and (2) indicative or economic (an important link of the state sector and independent subjects of market; it promotes formation and development of the state program; special indicators and economic gears are used).

Planning methods that are used in healthcare field are following:

1. A normative method is applied for account of forecasting and plan indexes with help of well-grounded norms and standards (capitation payment, total expenses for bed day, etc.);

2. A balance method allows maintain of population needs in medical care with their resource security (requirement of material and technical support with the possibility of financing discharge).

Strategic planning is a systematic process of envisioning a desired future and translating this vision into broadly defined goals or objectives and a sequence of steps to achieve them. It is a visionary process that results in major, long-range and far-reaching strategic directions or goals for the future.

Strategic planning can be on the state level and for medical organization.

Strategic planning on the state level includes: (1) formation of goals, tasks and priority of healthcare field formation; (2) a forecast of population health indexes; (3) norms, standards and social standards development; (4) an investment planning and their efficiency assessment.

Strategic planning of medical organization includes: (1) its principle goals and functions; (2) types and volume of medical care; (3) resource needs, necessary for medical care carrying out; (3) volume indexes of medical activity.

The strategic plan is the foundation of any organization's planning process. It begins with the organization's mission statement, scope, and objectives. It outlines the broad strategies to be followed to achieve the organization's stated objectives. Although the strategic plan is the lynchpin of the planning and budgeting process, it does not provide managers with detailed

operational guidance. The "how to" or perhaps "how we expect to" portion of the planning process is contained in the operating plan.

Strategic planning process supplies the organization with tools that promote future thinking, applies the systems approach, allows for setting goals and strategies, provides a common framework for decisions and communications, and relies on measuring performance. Strategic management model is presented in *Figure 1*.

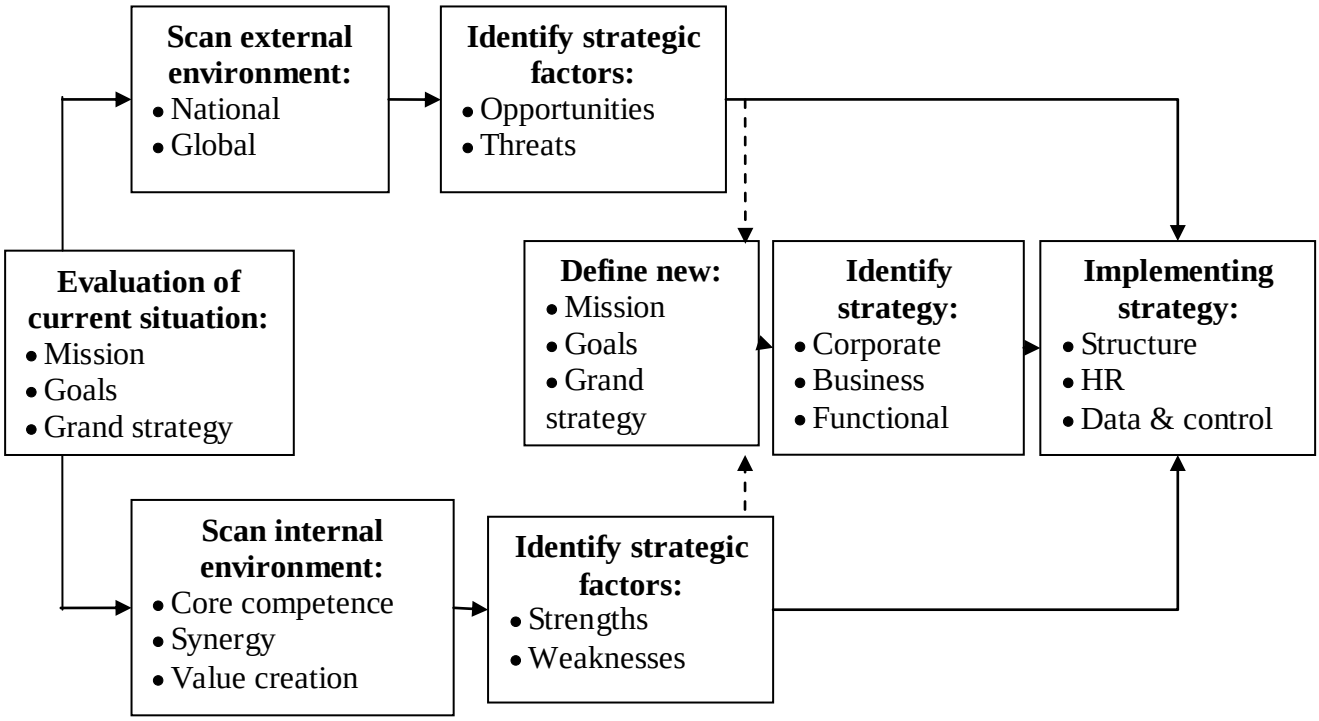

Figure 1. Model of strategic management

So the process of strategic planning consists of next stages: (1) creating a plan; (2) evaluating the plan; (3) communicating the plan; and (4) implementing the plan.

Elements of strategic plan: (1) introduction (mission statement), (2) practice summary (current situation analysis), (3) vision for the practice and practice goals, (4) strategies and objectives, (5) assignment of responsibility, monitoring and evaluation techniques.

Under the strategic planning next categories are used:

– *Mission* captures the essence of why the organization exists, who we are, what we do. It explains the basic needs, which organization fulfills, and expresses the core values of the organization.

– *Vision* shows, how the organization wants to be perceived in the future.

– *Core values* provide an underlying framework for making decisions. It is a part of organization's culture often rooted in ethical themes.

– *Goals* are the specific statements of the desired results to be achieved over a specified period of time. They shapes the way ahead in actionable terms.

Strategic plans provide the foundation for operational planning in the form of policies, procedures, and strategies for obtaining and using resources to achieve those directions.

Operating plans can be developed for any time horizon, but most organizations plan five years into the future. Thus, the term five-year plan is often used in place of operating plan.

In a five-year plan, the plans are most detailed for the first year, with each succeeding year's plan becoming less specific. Unlike the strategic plan, which is short on specifics, the five-year plan contains considerable detail concerning who is responsible for what particular function and when specific tasks are to be accomplished.

Every operating plan should identify the following resources: (1) the human recourses, (2) the time resources, (3) the financial resources, and (4) the physical resources (e.g. facilities, technology, etc.).

Some formulas for above mentioned resources calculation are presented below.

Planning of ambulatory care volume (quantity of visits per 1000 of population, *V*):

$$V = A \times C_n + D + P \quad (1)$$

V – a number of doctor's visits; A – a morbidity level per 1000 of population; C_n – a coefficient of repeated visits; D – a number of dispensary visits; P – a number of preventive visits.

A need in doctor positions (N):

$$N = (H_1 \times B_1 \times R) + (H_2 \times B_2 \times R) \quad (2)$$

H_1, H_2 – the norm of doctor's time work activity per 1 hour of reception in policlinic and home medical attendance; B_1, B_2 – the time of work activity by time-table of reception in policlinic and home medical attendance; R – a number of working days in a year.

Planning of activity volume:

Table 1.

Planning activity volume for departments

Beds number	**Bed working days in a year**	**Quantity of bed-days**	**Average treatment duration**	**Quantity of treated patients**	**Bed turnover**
1	2	3	4	5	6
		1×2		3÷4	5÷1

Table 2.

Planning activity volume for inpatient departments

Medical establishment department	**Bed quantity**	**Bed working days in a year**	**Quantity of bed-days**	**Average treatment duration**	**Quantity of treated patients**	**Bed turnover**
1	2	3	4	5	6	7
	Sum of lines	4÷2	Sum of lines	4÷6	Sum of lines	6÷2

Planning of bed quantity (coming from hospitalization level per 1000 of population, *Q):*

$$Q = \frac{A \times P \times T}{D} \times 100 \quad (3)$$

Q – quantity of average annual beds (1000 people); A – a morbidity level per 1000 of population; P – hospitalization percentage; T – average bed occupancy by a patient; D – average annual bed occupancy.

Table 3.

Planning of bed quantity

№	Bed working days in a year	Quantity of bed-days	Average treatment duration	Quantity of treated patients	Bed turnover	Bed quantity
	2	3	4	5	6	7
1						4÷5
2						4÷3
3						2÷1

Planning of personnel for an inpatient department (by bed quantity, N_k):

$$N_k = \frac{N_p + 365}{R} \quad (4)$$

N_k – bed number for 1 post (vacancy); N_p – patient number a day per 1 vacancy; R – planning number of bed working days in a year.

Planning of personnel for an inpatient department (by a number of treated patients, N_k):

$$N_k = \frac{N_p \times F \times B}{B + q} \quad (5)$$

N_k – bed number for 1 post (vacancy); N_p – a number of patients per day; F – a bed turnover; B – the annual budget of doctor's working time (working hours); q – holiday (hours).

V. Exercises

1. What is the primary difference between strategic and operating plans? Make a comparative analysis.
2. What is the most common time horizon for operating and strategic plans?
3. Briefly describe the contents of a typical financial plan.
4. Choose any medical organization. Analyze its strategic planning system by next characteristics: (a) mission, (b) vision, (c) core values, and (c) goals. (Write a short paragraph).
5. Solve a problem.

Example of situation problem

Calculate total need for medical assistance for the population in equivalent units of standard administrative district, if:

– Number of male population is 30 thousand people;
– Number of female population is 40 thousand people;
– Need coefficient of citizens with health care is 5.3.

Solution:

1) Determine the total population of 30 thousand + 40 thousand. = 70 thousand.

2) Determine the total need for medical assistance in equivalent units: 70 thousand. x 5.3 = 371 thousand.

Answer: Total need for medical care is 371 thousand people in equivalent units.

Content issue 2. Healthcare services market and its research methods

Theme 4. Market of healthcare services. Marketing and marketing strategy

The studies' form is **lecture**, limited to 2 hours.

I. Actuality

The development of medical services market in Ukraine has led to the emergence of the need to study the peculiarities of the general economic laws' action, the laws of production and use of medical services in order to develop effective state strategies for planning and rational resources use in the medical sector.

II. The purpose of the lecture is to familiarize students with the principles of organization, functioning mechanism and features of the health services market; ways to increase the effectiveness of healthcare in a market economy.

III. Lecture plan

1. Main categories of a market economy. Conjuncture of health care market
2. Essence and conditions of health care market's formation
3. Structure, functions, and classification of health care market
4. Nature of health care market

IV. Theme methodology guidelines

Market is an actual or nominal place where forces of demand and supply operate, and where buyers and sellers interact (directly or through intermediaries) to trade goods, services, or contracts or instruments, for money or barter.

Markets include mechanisms or means for (1) determining price of the traded item, (2) communicating the price information, (3) facilitating deals and transactions, and (4) effecting distribution. The market for a particular item is made up of existing and potential customers who need it and have the ability and willingness to pay for it.

Health care market is a complex of medical technology and equipment, pharmaceutical products, organizational methods of medical activity realized in competitive economic conditions. Objects of market relations are local authorities, insurance companies, patients (purchasers of health care goods and services). Providers of medical services are medical subjects. Medical subject is any medical-preventive establishment rendering medical care to population regardless of property forms.

Functions of health care market are next (1) informational (quantity and quality data about medical services and health care goods), (2) pricing (determination of price for services and goods), (3) regulating (regulation of outputs reducing per a medical service unit), (4) intercessory (determination of mutually beneficial relationship btw market participants).

Health care market consists of (1) medical services market, (2) pharmaceutical market, (3) medical equipment market, (4) medical employees' labour market, (5) market of innovations and intellectual capital, (6) medical insurance market, (7) stock market in the medical care sphere.

Characteristics of health care market are next (1) informational asymmetry, (2) the part of medical services is characterized as "public good", (3) accessibility and equality of medical services, (4) complexity of the cost form expression of a medical activity outcome, (5) high changeability of health market situation, (6) demand variability depending on the season, population structure, and territorial segment of the health market, (7) limited access for medical services providers (special higher education, tests, licensing, etc.), (8) moral-economic dissonance (medical activity requires considerable finances, but taking money for recovery is immoral).

Health care market operates if there is conjuncture, i.e. if there are supply, demand, price and competition.

Demand is an economic principle that describes a consumer's desire and willingness to pay a price for a specific good or service. *Demand in health care* is a medical services quantity, which population wants and can get in some time and by a definite price, or solvency requirement. Demand for medical care is derives from the more basic demand for health.

Demand depends on (1) price (an inverse tie), (2) the income level of population (a direct tie), (3) the size of population (a direct tie), (4) population's structure, (5) supply and demand intensiveness, (6) taste changes of medical service purchases.

Demand model of health care market is represented in *Figure 2.*

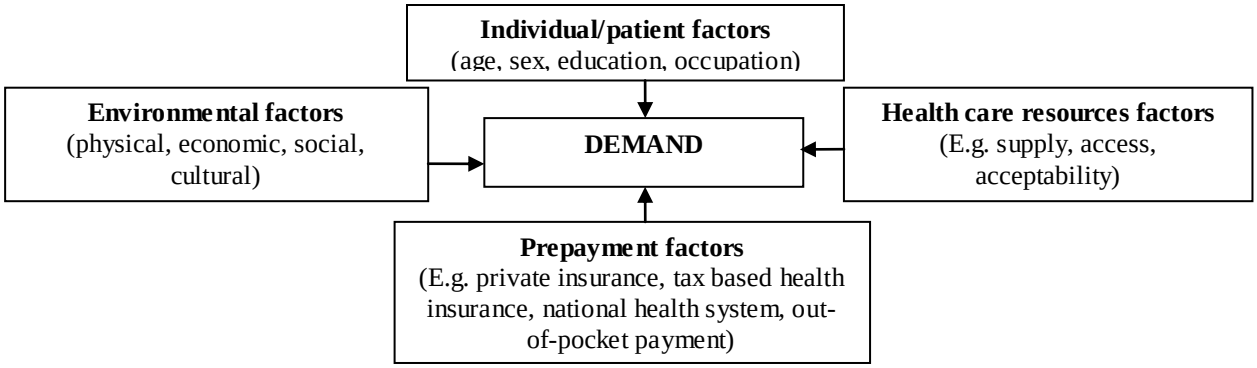

Figure 2. Demand model of the health care market

The law of demand states that, all other factors being equal, as the price of a good or service increases, consumer demand for the good or service will decrease, and vice versa. The law of demand says that the higher the price, the lower the quantity demanded (*Figure 3)*, because consumers' opportunity cost to acquire that good or service increases, and they must make more tradeoffs to acquire the more expensive product.

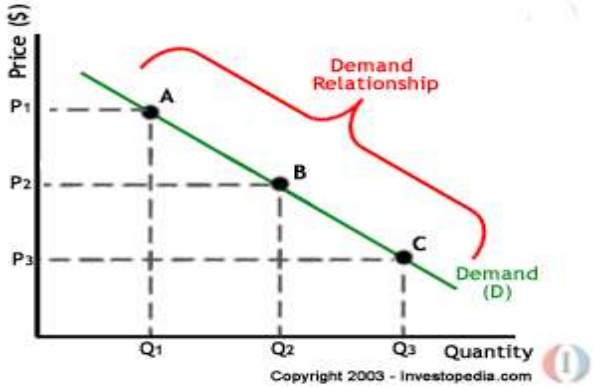

Figure 3. Demand curve

Figure 3 depicts the law of demand using a demand curve, which is always downward sloping. Each point on the curve (A, B, C) reflects a direct correlation between quantity demanded (Q) and price (P). So, at point A, the quantity demanded will be Q1 and the price will be P1, and so on.

Demand is closely related to *supply*. Supply is an economic principle that describes the total amount of a specific good or service that is available to consumers.

The law of supply states that, all other factors being equal, as the price of a good or service increases, the quantity of goods or services that suppliers offer will increase, and vice versa. The law of supply says that as the price of an item goes up, suppliers will attempt to maximize their profits by increasing the quantity offered for sale. *Supply in health care* is a medical services quantity, which medical workers can offer in the current time by a definite price.

Supply depends on (1) price (a direct tie), (2) doctors quantity (a direct tie), (3) equipment improvement (a direct tie), (4) competition (promotes assortment enlargement and increase of medical services quantity), (5) budget-tax policy (increasing of tax rate decreases supply).

Figure 4 depicts the law of supply using a supply curve, which is always upward sloping. A, B and C are points on the supply curve. Each point on the curve reflects a direct correlation

between quantity supplied (Q) and price (P). So, at point A, the quantity supplied will be Q1 and the price will be P1, and so on.

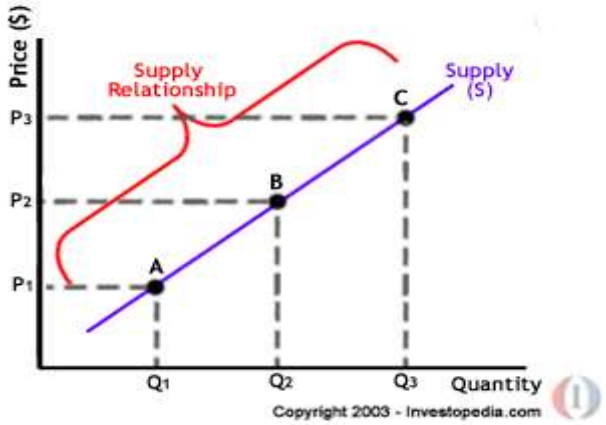

Figure 4. Supply curve

Equilibrium price is a price for a unit of production, satisfying both a provider and purchaser of this product or service. Economic equilibrium is a condition or state in which economic forces of the market are balanced. Economic equilibrium may also be defined as the point at which supply equals demand for a product, with the equilibrium price existing where the hypothetical supply and demand curves intersect (*Figure 5)*. At this point, the price of the goods will be P* and the quantity will be Q*. These figures are referred to as equilibrium price and quantity.

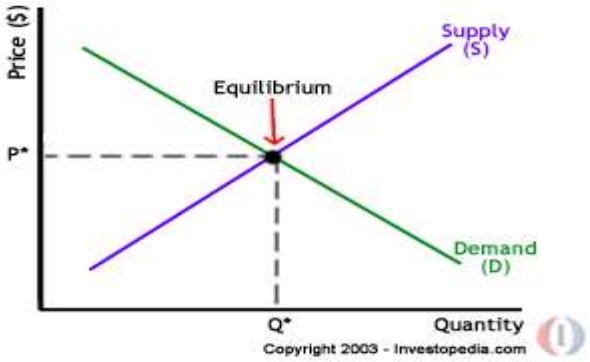

Figure 5. Equilibrium price

Key conception, capturing the essence of market relationships, is competition. *Competition* is an opposition btw economic entities for the best medical services production and sale conditions, its price fixation with the purpose of profit earning.

There are following competition forms:

- monopoly (one provider, lots of purchasers, goods are undifferentiated and can't be substituted);
- monopsony (a monopoly of a singe commodity purchaser);
- oligopoly (a small number of providers of standardized or differentiated goods/services, an access to market is complicated);
- partial monopolistic competition (lots of providers and purchasers of goods/services, services are differentiated);
- perfect competition (all providers sell and identical product/service; providers cannot control the market price of a product/service; all providers have a relative small market share; purchasers have complete information about the product/service; an access and exit to market is free).

Health care market in many countries is controlled by a state in different forms. So, health care market is much different from the market of perfect competition. It is a market of *imperfect competition*, in some countries it is market of partial monopolistic competition or even monopoly.

V. Exercises

1. Analyze researches of global health care market. Give your own conclusions about problems and perspectives of its development.
2. Analyze innovation technologies existing at the global health care market.
3. Characterize health care market of your country on grounds of (1) legal bases of market regulation, (2) competitive type, (3) structure, (4) main medical services and goods proposed at the market, (5) main providers and purchasers of medical services, (6) demand for medical services, (7) supply of medical services, (8) innovations implementing, (9) tendencies of its development.
4. Make a report on the following topics:
    1) Principles of market economy and its functioning gear
    2) Nature of health care market
    3) Conditions of health care market's formation
    4) Providers and purchasers in health service market
    5) Conjuncture of health care market
    6) Perfect and imperfect competition
    7) Organizational, economic and legal bases of the health care market regulation.

Theme 5. Healthcare market research methods. Organization of marketing activity in stomatology

The studies' form is **seminar**, limited to 2 hours.

I. Actuality

The development of the health care system in the market environment leads to the industries commercialization, volume of paid medical services increasing, various enterprises' forms implementation, etc.

The market of medical services is becoming an objective reality, and therefore, we have to understand its features and functioning mechanism. And marketing helps this understanding.

In a market environment, marketing becomes a universal technology for the operation of health care institutions of any ownership form.

II. The purposes of the seminar

Students must *know*:

1) definition and essence of marketing;
2) principles, functions and purpose of marketing activity;
3) basic concepts of marketing;
4) methods of marketing research;
5) marketing research process;
6) essence of marketing management;

Students must *be able*:

7) to characterize functional bonds of marketing researches structure;
8) to understand what kind of information can be obtained by means of marketing research;
9) to understand and characterize methods of marketing researches;
10) to set tasks of marketing researches and to evaluate obtained results;
11) to analyze capabilities of health care market.

III. 2 hours are allocated for the **Individual Students' Work (ISW).**

Questions for self-control and discussing

1. Definition and essence of marketing activity.

2. Principles, functions and purpose of marketing activity.
3. Basic concepts of marketing (need, want, desire, demand, value, satisfaction).
4. Model of marketing activity.
5. Marketing mix.
6. Marketing research process.
7. Methods of marketing research.
8. Segmentation.
9. Marketing environment.
10. Types of marketing depending on demand.
11. Marketing strategies.
12. Features of marketing activity in health care.

IV. Theme methodology guidelines

One of the most important components of the market analysis, including the market of medical services, is *marketing research*, which is the systematic collection, registration and analysis of data in the market of medical services and goods.

In the health care field, *marketing* is a social and managerial process by which individuals and groups obtain what they need and want through creating and exchanging medical and pharmaceutical services, products and value with others. In marketing, virtually all elements of medical and pharmaceutical activities are grouped into a single technological process. The result of this process is to provide consumers with benefits that meet their medical and pharmaceutical needs. So, marketing is everything a company does to acquire customers and maintain a relationship with them.

Marketing is a social and managerial process, based on the following key concepts: need, want (requirement), desire, demand, value, satisfaction (*Figure 6)*.

The most important and basic concepts underlying marketing are the idea of human needs and requirements.

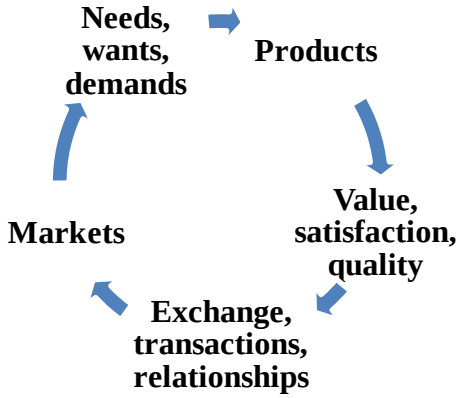

Figure 6. Key marketing concepts

Need is a sense of lack of something. They can be physiological (food, clothing, warmth, safety), social (spiritual intimacy, influence, attachment), personal (need for knowledge and self-expression). For marketing in health care, this concept means a feeling of illness and a person's desire to become healthy.

Want is a need that has taken a specific form in accordance with the cultural level, the individual personality and the offers of the health care market. For example, the patient feels the requirement for a certain medication. Producers of goods and services try to form a link between what they produce and the needs of people. They do not create want, but reveal and satisfy it.

Wants transforms into specific desires, which transforms into market demand for specific products. There is an exchange in the form of a transaction between the producer and the consumer.

Demand is a need reinforced by purchasing power (*see Theme 4*). People's requests are

almost limitless, and resources for meeting needs are limited, so people will choose those services or goods that will give him the greatest satisfaction within his financial capabilities. Human needs, wants and demands suggest the existence of goods (services) for their satisfaction.

A product (or service) is anything that can satisfy a need or requirement and is offered to the market in order to attract attention, purchase, use or consumption. In medicine, goods are medical services, medicines, medical devices, and medical equipment.

Customer *value* is the difference between the values the patient gains from owning and using a product (getting a service) and the cost of obtaining the product (service).

Customer *satisfaction* is the extent to which a product's (service) perceived performance matches a patient's expectations. The more the product corresponds to the wishes of the consumer, the more success the producer will achieve.

*Exchang*e is the act of obtaining a desired object from someone by offering something in return. To complete the exchange, the following conditions must be met (1) there should be at least two parties (doctor and patient); (2) each party must have something that could be of value to the other party; (3) each party should be able to communicate and deliver its goods; (4) each party must be completely free in accepting or rejecting the offer of the other party; (5) each party must be sure of the expediency or desirability of dealing with the other party.

Transaction is the commercial exchange of values between two parties. The transaction can be both monetary and barter. For example, a patient makes repairs in a hospital and receives a medical service as a completed operation for this amount. Several conditions are necessary to implement the transaction. They are following (1) at least two objects of value; (2) agreed-upon conditions; (3) a time of transaction; and (4) a place of agreement. These conditions are concluded in the form of an agreement between the parties.

Relationship marketing is the process of creating, maintaining and enhancing strong, value-laden relationships with customers and other stakeholders. Marketing in medicine, first of all, should be *patient oriented*, developing and offering exactly what the patient wants and what he (she) needs. The main principle of marketing in health care is the concept of social and ethical marketing (i.e. a medical organization should not only fully and effectively meet the needs of consumers, but also maintain and improve the health and well-being of individuals and society as a whole).

A simple marketing system is presented in *Figure 7.*

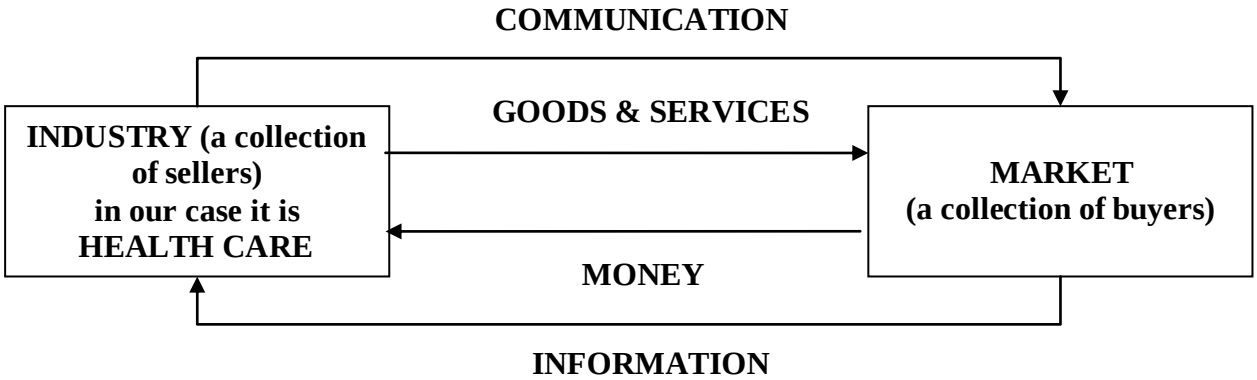

Figure 7. Simple marketing system

Marketing mix (4 P's of marketing) is a set of marketing tools a company uses to pursue its marketing objectives in the target market. The 4 P's of marketing (marketing mix) are product, place, price and promotion.

– Product refers to an item or items a business intends to sell. When examining a product, questions should be asked such as, what product is being sold? What differentiates the product from its competitors? Can the product be marketed with a secondary product? And are there substitute products in the market?

– Price refers to how much the product is likely to cost. When establishing price, considerations needs to be given to cost the unit cost price, marketing costs and distribution expenses.

– Place refers to distribution of the product. Key considerations include whether the product is going to be sold through a physical store front, online or made available through both distribution channels?

– Finally, promotion refers to the integrated marketing communications campaign. Promotional activities may include advertising, personal selling, sales promotions, public relations, direct marketing, sponsorship and guerrilla marketing. Promotions are likely to vary being dependent on what stage of product life cycle the product is currently in. Marketers must be aware that consumers associate a product's price and distribution with its quality, and would be prudent to take this into account when devising the overall marketing strategy.

Marketing research is a systematic collection, display and analysis of market information on various aspects of marketing activities of medical enterprises. Stages of marketing research are the following: (1) problems identification and research objectives formulation; (2) selection of informational sources; (3) data collection and its storage; (4) obtained data analysis; (5) presentation of the results and decision-making.

Mostly, marketing research process uses *situational analysis*. Due to this analysis we analyze (1) economic environment that states of macro-economy and changes in it bring marketing opportunities and constraints (e.g. factors of high inflation and unemployment levels, changes in medical technology); (2) social environment, which includes general cultural and social traditions, norms and attitudes; as values change, change brings the need for new products or services (e.g. public demand for new treatment); (3) political environment that includes attitudes and reactions of the general public, social and business critics; (4) legal environment, which includes state and local legislation directs at protecting both business competition and consumer rights.

Marketing management is the analysis, planning, implementation, and control of programs designed to create, build, and maintain beneficial exchanges with target buyers (in our case, patients) for the purpose of achieving organizational objectives. It involves (1) demand management (i.e., demarketing is marketing to reduce demand temporarily or permanently. The aim is not to destroy demand, but only to reduce or shift it); and (2) customer relationship management.

Marketing planning consists of following stages:

1. Establishing objectives (provides the framework for the marketing plan).
2. Selecting the target market:
   - What do customers want?
   - What must be done to satisfy these wants and needs?
   - What is the size of market?
   - What is it growth profile?
3. Developing the marketing mix (must be managed to satisfy target market and achieve objectives).
4. Implementation of marketing plan:
   - Putting the plan into action and performing marketing tasks according to predefined schedule;
   - Marketing executives must closely monitor and coordinate implementation of the plan.
5. Controlling:
   - Results must be measured;
   - Results are compared with objectives;
   - Decisions are made on whether the plan is achieving objectives.

V. Exercises

1. Analyze market of stomatological services of your country by next positions: (1) product; (2) price; (3) place; (4) promotion. Write an essay (min 3 pages).
2. Make a situational analysis of dentistry market of your country. Write an essay (min 3 pages).
3. Which segments can you single out at the dentistry market of Ukraine? Which segmentation criterion have you used? Why? Which target segment can you propose to the dentistry hospital? Argue your answer.

Theme 6. Pricing of the medical and stomatological services. Calculation of the cost of medical services on a commercial basis

The studies' form is **practical classes**, limited to 2 hours.

I. Actuality

Equitable access to essential, high-quality and affordable essential medicines and other medical technologies depends on affordable and fair pricing and effective financing schemes. Promoting affordable and fair prices and cost-effective interventions is central to the achievement of universal health coverage.

Students must be got to know with the pricing procedure with purpose of adequate price formation for services, they render.

II. The purposes of the practical classes

Students must *know*:

1) essence and content of pricing in health care;
2) functions of price;
3) classification of price;
4) classification of expenses;
5) main points of price policy in health care;
6) main pricing methods;
7) classification of price strategies;

Students must *be able*:

8) to calculate price for medical and stomatological services;
9) to choose adequate pricing method;
10) to choose adequate price strategy.

III. 1 hour is allocated for the **Individual Students' Work (ISW).**

Questions for self-control and discussing

1. Content of price for medical services and its functions
2. Price classification
3. Factors affecting price
4. Operative principles of price regulation
5. Pricing policy
6. Structure of price for medical service
7. Classification of expenses
8. Pricing methods
9. Price strategies
10. Price elasticity of demand

IV. Theme methodology guidelines

Price is a monetary expression of the goods' (or services) value. It is the amount a customer pays for that product or service. Medicines prices are not static. The price of a medicine or a technology is generally a function of markets, and changes over time. Prices can be measured and evaluated as the price paid to the manufacturer, the price paid by the consumer or patient, or prices from suppliers.

Cost is the expense that a business incurs in bringing a product or service to market. Cost

of medical services is an amount of labor invested in the provision of medical services of a given quality. A characteristic feature of the medical service is that the process of its production coincides with the process of its implementation.

The difference between the price that is paid and the cost that is incurred is the profit the business makes when the item sells. If a customer pays $10 for an item that costs the company $5 to produce and sell, the company makes a $5 profit.

The price consists of *two main elements*: prime cost and profit.

The prime cost is the costs of a medical and preventive institution for the provision of medical services, expressed in monetary terms. It includes material costs and labor remuneration for the employees of a medical institution per unit of services. The prime cost shows how much the medical care costs to the institution, reflects current costs.

The profit is put into the price as a percentage of the prime cost. In the conditions of competition between medical institutions of the same profile in the market of paid medical services, this percentage depends on the quality and comfort of patient care. The percentage of profit fluctuates on average from 15 to 30% of the medical services' cost.

$$Profit = Sales - Expenditure \quad (6)$$

Medical institutions in practice use the next formula for the cost of the service calculation:

$$Cost\ of\ Service = Direct\ Expenses + Inderect\ Expense \quad (7)$$

Direct expenses include expenses directly related to the medical service and consumed in the process of its provision (e.g., labour expenses of the main staff, charge on payroll for the main staff, material costs consumed in the process of the service providing: medicines, dressings, medical supplies, wear of soft inventory and equipment wearing).

Indirect expenses include those types of costs that are necessary to ensure the activities of the institution, but not consumed directly in the process of providing medical care (e.g., pay for general staff, domestic expenses, travel and business travel expenses, wear of soft equipment in office space, depreciation of buildings, structures and other fixed assets, etc.).

There are other types of expenses: (1) constant – expenses are not influenced by charge of medical service volume (e.g. municipal payment, insurance fee); (2) variable – expenses depending on medical service volume (medicines, nourishment expenses); (3) total – a sum of constant and variable expenses; (4) average – inputs on an only medical service; (5) maximum – costs required for supplementary medical aid or care; (6) basic – a medical treatment industrial process without these costs; (7) overhead – expenses required for medical establishment work, but not concerned with industrial process.

For medical services, the following *types of prices* are applied:

1. "*Budget estimates*" (or "budget standards"): financing of medical institutions on the basis of accepted regulatory documents. They serve for settlements between institutions of the same territory, between departments of the same institution. Calculations of prices depend on the available financial capacity; the needs of the medical institution for the implementation of its activities are not taken into account.
2. *Tariffs* in the system of compulsory medical insurance: cash amounts intended to reimburse medical institutions for the implementation of the program of state guarantees for free medical care to the population. These prices are of a contractual nature; they do not include profits and are usually below the cost price.
3. *Contract prices* in the voluntary medical insurance: prices that are approved by agreements between health facilities and other institutions and organizations, enterprises, other legal entities for the purpose of medical care of employees. Contractual prices are close to free market prices, and include prime cost and profit; are regulated by contracts.

4. *Free market prices* for paid medical services: prices are formed on the basis of supply and demand and depend on the market of medical services. The structure of such a price depends on the economic goal of the medical institution, used, as a rule, in non-governmental medical organizations.

Stages of pricing are the following:

1. Selecting the pricing objective.
2. Determining demand.
3. Estimating costs.
4. Analyzing competitors by next criterion: costs, prices, offers.
5. Selecting a pricing method.
6. Selecting the final price.

Medical enterprise can pursue next pricing objectives (1) survival, (2) maximize current profit, (3) maximize market share, (4) maximize market skimming, (5) product – quality leadership, (6) coverage of costs, their constant reduction; (7) ensuring profitability of production, services; (8) increasing the competitiveness of service providers; (10) formation of a stable flow of patients; (11) ensuring the optimal utilization of personnel and medical equipment.

Medical enterprise needs to consider (1) price sensitivity, and (2) price elasticity of demand. *Price sensitivity* is the degree to which the price of a product affects consumers' purchasing behaviors. In economics, price sensitivity is commonly measured using the *price elasticity of demand*. Last one determines the changes in demand with unit change in price. If there is little or no change in demand, it is said to be *price inelastic*. If there is a significant change in demand, then it is said to be *price elastic*.

Pricing methods are represented at the *Figure 8*.

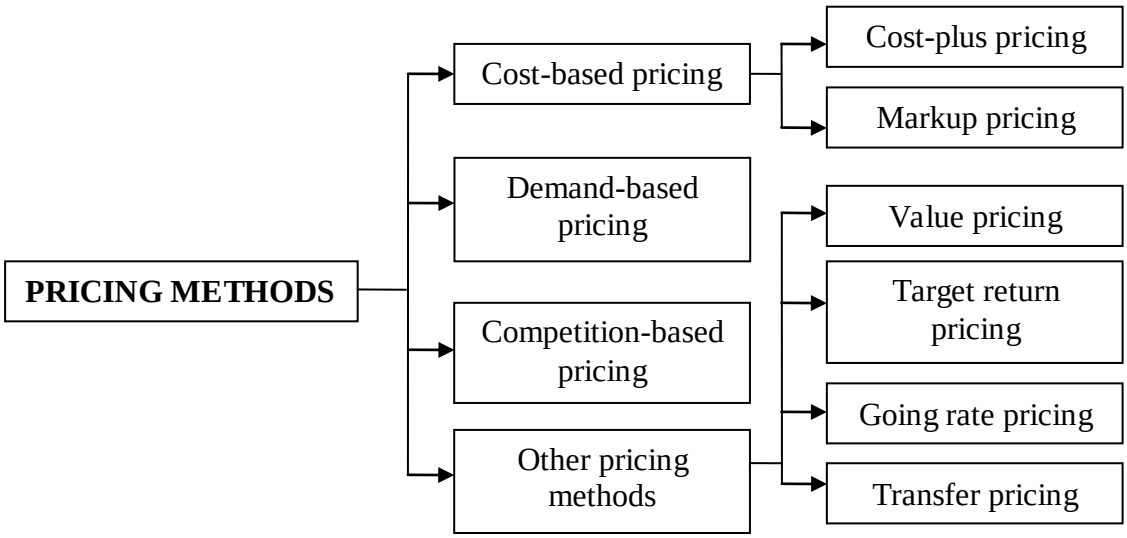

Figure 8. Pricing methods

The main methods of establishing prices are:

- *Cost-plus pricing.* Used mainly by manufacturers, cost-plus pricing assures that all costs, both fixed and variable, are covered and the desired profit percentage is attained.
- *Demand pricing.* Used by companies that sell their product through a variety of sources at differing prices based on demand.
- *Competitive pricing.* Used by companies that are entering a market where there is already an established price and it is difficult to differentiate one product from another.
- *Markup pricing.* Used mainly by retailers, markup pricing is calculated by adding your desired profit to the cost of the product.

Pricing strategies are the following (1) market pricing, (2) cost pricing (mark up, margin generation, breakeven), (3) loss leader, (4) psychological pricing (prestige, odd even pricing), (5)

demand, (6) competitive pricing (below market, parity or price matching), (7) bundle, (8) skimming, (9) markdowns (temporary, permanent), (10) payment and delivery terms.

V. Exercises

1. Analyze, which type of price is used in your country. Give the detailed answer.
2. Analyze the government price regulation. Write an essay (min 3 pages).
3. Analyze Product Life Cycle. How can it be used in health care? Give the detailed answer.
4. Solve a problem.

Example of situation problem

The hospital for 300 beds provides medical care to inpatients of diagnostic groups A and B. The number of beds in department A and B is 100 and 200 beds, correspondingly. The average length of stay in the hospital is 5 days in department A and 10 days in department B. Out of the auxiliary departments in the hospital there is an administrative service, a dining room and a laundry. Occupancy of hospital departments is 100%.

Calculate the cost of treatment in the hospital by departments.

Additional information

1. Costs of the hospital by departments, $.
   Auxiliary departments:
   - Administrative Service – 900;
   - Dining room – 475;
   - Laundry – 225.

   Medical departments:
   - Department A – 1200;
   - Department B – 1000.
2. Base units for each auxiliary department.
   - Administrative service number of employees in offices;
   - Serving amount of servings;
   - Laundry weight (in kg).
3. Number of staff composition of the departments:
   - Administrative department – 10;
   - Dining room – 5;
   - Laundry room – 5;
   - Department A – 20;
   - Department B – 30.
4. The volume of laundry services (kg per week):
   Dining room – 20;
   Department A – 60;
   Department B – 40.

Distribution of hospital expanses by departments

Department	**Expanses, $**	**Administration**	**Sub-expenses**	**Laundry**	**Sub-expenses**	**Dining room**	**Total expenses**
Administration	900	(900)					
Laundry	225	75 (5 persons)	300	(300)			
Dining room	475	75 (5 persons)	550	50	600	(600)	
Department A	1200	300 (20 persons)	1500	150	1650	200	1850

Department B	1000	450 (30 persons)	1450	100	1550	400	1950
Total	3800		3800		3800		3800

Solution:

1) Put expense data into the table.

2) Distribute expenses for the administrative department in proportion to the number of employees in each of the existing auxiliary and main departments:

900 / (5 + 5 + 20 + 30) = 15, correspondingly

For laundry: 75 $ (15 × 5 = 75);

For dining room: 75 $ (15 × 5 = 75);

For department A: 300 $ (20 × 15 = 300), etc.

3) Intermediate expenses (sub-expenditures) are calculated, taking into account that the administrative department expenses are distributed among other departments.

4) It is assumed that the dining room erases 20 kg of laundry per week, the department A – 60 kg, the department B – 40 kg. Consequently, the proportion will be next 20:60:40 = 1: 3: 2.

5) Proportion of distribution of expenses for dining room 1: 2 or 100 servings: 200 servings daily in each meal.

6) Calculate the total expenses for department A and department B.

7) Calculate profitability = 20%, or for the department A = 370$; for the department B = 390$.

8) Price of the total service of the department A = 1850 +370 = 2220$.

9) Price of 1 patient-day in the department A = 2220$ ÷ 100 patients = 22,2$.

10) Duration of stay in the department A is 5 days, consequently, the cost of treatment = 22,2$ × 5 days = 111$.

The calculation for the department B is similar.

Content issue 3. Organization and content of financial management in the healthcare system and stomatology

Theme 7. Financing of healthcare system: its essence, sources and features. Calculation of the cost savings' possibility in the process of outpatient and polyclinic care providing to the population

The studies' form is **seminar**, limited to 2 hours.

I. Actuality

Nowadays, in times of high profitability and abundant financial resources, the finance function tends to decline in importance. Healthcare providers are facing an increasingly hostile financial environment, and any business that ignores the finance function runs the risk of financial deterioration, which ultimately can lead to bankruptcy and closure.

One of the main factors in the health care system's development of any country is the indicators of funding and its sources' stability. Each country determines the ways of their formation at their own discretion, taking into account the political and economic background. Thus, the study of the health care system's financing remains current.

II. The purposes of the seminar

Students must *know*:

1) essence of finances;
2) essence of the budget financing;
3) a concept of the budget;
4) mechanisms of budget formation in the health care system;
5) essence of budget transfers;
6) main models of health care system organization and financing.

Students must *be able*:

7) to interpret the essence of financial management of medical institutions;
8) to interpret the economic mechanism of mutual settlements between health facilities.

III. 2 hours are allocated for the **Individual Students' Work (ISW).**

Questions for self-control and discussing

1. Economic essence of finances and its main points
2. Sources of finance formation in the health care system
3. Main health system models and its features
4. Economic essence of budget
5. Features of budget formation process
6. Budget transfers: equalization grants, subventions, cash withdrawals, subsidy, donations
7. Calculation of the cost savings' possibility in the process of outpatient and polyclinic care providing to the population

IV. Theme methodology guidelines

The issues of financing of medical assistance to the population are of great interest in the health economics at both macro and micro levels.

Health care financing is:

- mobilization of funds for health care;
- allocation of funds to the regions and population groups and for specific types of health care;
- mechanisms for paying for health care.

There are following *financing sources* available for the health care: (1) general revenue or earmarked taxes; (2) social insurance contributions (compulsory health insurance dues and salary taxes); (3) private insurance premiums (premiums from voluntary health insurance); (4) community financing; (5) direct out-of-pocket payments; (6) credit, subsides and cash grants from foreign non-government and government organizations, charity organizations.

Depending on the sources of funding, organizational forms, and financing mechanism, health systems in the world are divided into *three forms*:

- state (public) health system, most clearly represented in the UK;
- insurance system, most fully and clearly presented in European countries such as Germany, France;
- private system that is mostly represented by the US public health system.

In many states, mixed systems and different organizational forms exist and develop. For example, in Ukraine we can say the budget-insurance form of healthcare is being developed.

Main features, advantages and disadvantages of the financing systems are presented in *Table 4*.

Budgeting is an offshoot of the planning process. A set of budgets is the basic managerial accounting tool used to tie together planning and control functions. *Budgeting* involves detailed plans, expressed quantitatively in monitory terms, which specify how resources will be obtained and used during a specified period of time.

Although planning, communication, and allocation are important purposes of the budgeting process, perhaps the greatest value of budgeting is that it establishes financial benchmarks for control. When compared to actual results, budgets provide managers with feedback about the relative financial performance of the entity – whether it is a department, diagnosis, contract, or the organization as a whole. Finally, budgets provide managers with information about what needs to be done to improve performance.

Budget is a financial document reflecting an estimation of revenue and expenses over a specified future period of time; it is compiled and re-evaluated on a periodic basis. Budgets can be made for a person, a family, a group of people, a business, a government, a country, a multinational organization or just about anything else that makes and spends money.

Although an organization's immediate financial expectations are expressed in a document called the budget (or master budget), in most organizations "the budget" is actually composed of *several different budgets*:

- *statistics budget* specifies the volume and resource assumptions in other budgets. It provides general guidance;
- *revenue budget* consists of detailed information from the statistics budget, which combines volume data with reimbursement data to develop revenue forecasts;
- *expense budget* consists of detailed information from the statistics budget, which focuses on the costs of providing services. The expense budget typically is divided into labor (salaries, wages, and fringe benefits) and nonlabor components. The nonlabor components include expenses associated with such items as depreciation, leases, utilities, administrative and medical supplies, and medical training and education. Expenses normally will be broken down into fixed and variable components;
- *operating budget* is a combination of the revenue and expense budgets. For smaller businesses, the statistics, revenue, and expense budgets often are combined into a single operating budget. Because the operating budget (and, by definition, the revenue and expense budgets) is prepared using accrual accounting methods, it can be roughly thought of as a forecasted income statement;
- *cash budget* focuses on the organization's cash position. It recasts the operating budget to focus on the actual flow of cash into and out of a business. Thus, the cash budget tells managers whether the business is projected to generate excess cash, which will have to be invested, or to experience a cash shortfall, which will have to be covered in some way.

In Ukraine, the hospital has the right of a legal entity and has on its balance sheet the separated property, accounts in banks, independently disposes of resources, including financial means allocated and attracted to provide medical assistance to the population, uses a seal with its name, can lay on its own behalf any laws not prohibited by law and its charter contracts, be a plaintiff and a defendant in court, arbitration or arbitration court. The hospital is managed by the chief physician, whose economic levers of influence are based on the following documents: income and expenses budget; staffing schedule; tariffication.

Tariffication is a document in which all the staff units of the hospital are fixed and their salaries are indicated. On its basis, an annual salary budget is formed.

Staff schedule is a document that reflects the distribution of the number of doctors, nursing staff and paramedical personnel, service personnel according to the population number that resides on the territory of the hospital site.

Income and expenses budget is the main document that highlights the process of hospital's financing. It is formed annually and calculations are made on the basis of the indicators of the past year (e.g., forming an estimate for 2017, based on the costs of 2016 year). The disadvantage of this formation is that it does not take into account the dynamics of the incidence, the flow of patients, which may lead to an increase in the drugs' need, and, as a result, there will be a deficit, and this situation will be negatively reflected at the level of provision of medical care.

Having created a draft of such a budget, the hospital sends it to the municipal health department at the end of the accounting year (September-October). There, a general budget is formed, based on the same budget documents of all municipal medical institutions. Then it is sent to the municipal department of the financial department, then to the regional financial department, where, in turn, the consolidated health budget is formed. This consolidated budget is sent to Kiev, to the Ministry of Finance, where it is considered, and after the approval of the state budget they form check numbers that are sent to the regional department of the financial department, and from it to the municipal department of the financial department. The municipal budget is approved at the session of people's deputies, but already taking into account the data of the control figures. After that, the approved financial sources are taken to the municipal health department, then to the appropriate hospital. This mechanism we can see in *Figure 9*.

Table 4.

Main features, advantages and disadvantages of health systems

Name of the system	Main features	Advantages	Disadvantages	Countries, where it exists
State (public) health system (*Beveridge health care model*) (The National Health Service, Beveridge, 1948).	– funded from general government revenues, coverage for entire population; – the main financing source is total tax proceeds; – more generally in high income countries (and then globally), a shift from health coverage as a right of labor, to "health as a human right" or health coverage as a constitutional or legal right; – finance dues and distribution by specialized organization; – concerned with universality, social cohesion/solidarity; – medical establishments financing is based on fixed standards; – payment forms for medical service are state and local budgets; – medical service purchasers are state or regional departments of health care and general practitioners fundholders	– a high level of the system administration; – a control of funds; – an availability, transparency and accountability of the system for population; – securing of fair Health Care financing; – securing of fair health care financing; – a high quality of the medical care in the condition of a frugal cost; – equal, universal access to medical aid	– a deficit of budget financing; – no possibility to choose a doctor, reception hours, queues; – employee turnover; – low salaries of medical workers; – state control of pricing	Great Britain, Denmark, Italy, Norway, Belgium, Canada, etc.
*Insurance system (Bismarck health care model) (*Social Health Insurance, Bismarck, 1883).	– compulsory funding by employers and employees, administered by pre-existing "sickness funds"; – the main financing sources are compulsory, fixed dues and special taxes; – a "right" associated with labor status to keep workers healthy to improve productivity and pre-empt labor unrest; – medical service purchasers are independent specializes organizations or the united insurance funds; – state administrates some element of compulsory health insurance; – upper and lower profit margins; – labor remuneration of medical workers is determined	–a high security level of free medical care; –due number of addresses; –the availability of additional financing sources; –financial investment into the field renewal; –a free choice of medical care promoter; –a state security in a high quality of the medical care	– huge administrative expenses; – unequal access to medical aid	Germany, Austria, Belgium, France, Czech Republic, Hungary, Estonia, etc.

	by an insurance company; – free choice of a doctor and medical institutions; – competition between funds and medical services providers; – sources availability for innovations and medical labor motivation.			
Private system	– the main financing source is private population finances; – a close connection btw individual risk and a premium size and a medical service volume; – selection btw persons, wishing to get medical care (preference to healthy, young, rich); – direction to specialized and high specialized medical care; – competition btw medical establishments and insurance companies	– concentration of financial sources in the health care system; – significant investments into innovations; – wide purchaser's variety; – security of a high medical care quality	– social equilibrium and accessibility principles of medical care are broken; – high cost of medical and pharmaceutical services; – a breach of the social justice in financing and availability of the medical services; – significant administrative expenses	The USA, South Korea
Semashko system	– health care is financed by a the government funds; – the main principle is centralization of management and control; – centralized mechanism of budget formation; – fixed prices and government norms for medical services	– guaranteed by the government access to the medical services and pharmaceutical products; – guaranteed quality of medical services	– government monopsony; – planned administrative economy	Post-soviet countries, Ukraine
Mixed social and private health insurance systems	– some services are funded on the principles of solidarity, while others are financed by additional private contributions; – cross subsidizing of the poorer population at the expense of the rich ones; – main principle is the principle of paying capacibility	– a high security level of free medical care; – concentration of financial sources in the health care system; – wide purchaser's variety; – security of a high medical care quality	– social equilibrium and accessibility principles of medical care are broken; – high cost of some medical and pharmaceutical services; – a breach of the social justice in financing and availability of the medical services;	Zimbabwe, South Africa

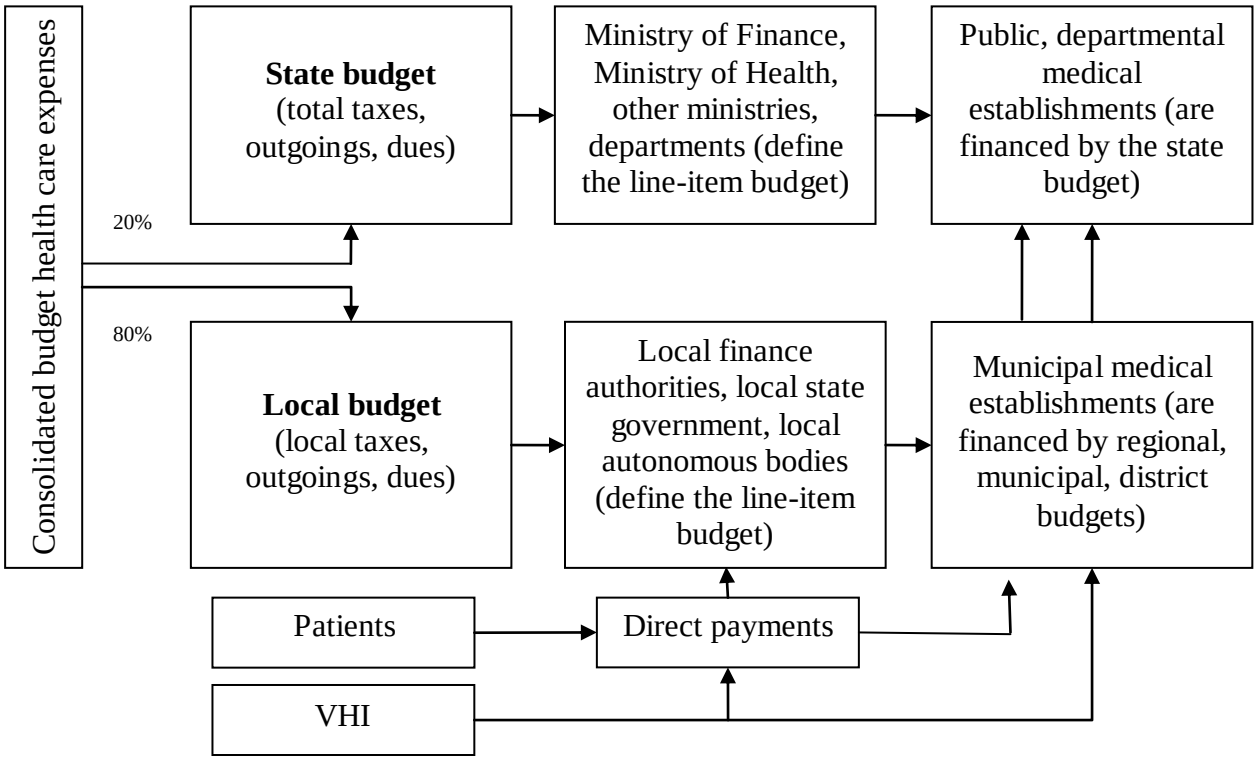

Figure 9. Financing of Ukrainian health care system

The state health policy is provided by budgetary allocations in the amount that meets its scientifically based needs, but not less than 10 % of the national income. The amount of budget financing is determined on the basis of scientifically based standards, per capita.

Health financing is provided at the expense of the State Budget of Ukraine, the budget of the Republic of Crimea, budgets of local and regional self-government, health insurance funds, charitable foundations and any other sources not prohibited by law.

A serious problem of the current system is an acute shortage of financial resources. In the hierarchy of countries that provided their statistics for international comparisons, Ukraine ranks 32nd behind the healthcare cost indicator per capita (18.3 $); in the distribution for GDP per capita, for medical services there is 34th place. So it is one of the worth places in comparison with other countries. The financial provision of health protection, in accordance with the conclusions of domestic and international experts, is irregular, unplanned.

The average amount of expenditure from local budgets per capita increases yearly, although its amount is very meager.

The average monthly salary of employees in health care system of Ukraine is 60.5% of the average for the economy.

In the structure of health care expenditure, 53% is spent on wages, 13% is spent for utility payments and delivery for all delivery needs (i.e. medicines, equipment, supplies, medical equipment, repairs, etc.).

So these problems in the financing process call the shorts of necessity of Ukrainian health care system reformation.

V. Exercises

1. Define the role of financial management in health care. (Write a short paragraph).
2. Make comparative analysis of the main health system models by the following characteristics: (1) financial sources, (2) mechanism of financial sources obtaining, (3) medical staff payroll, (4) population access to the health care, (5) system's control, (6) quality of health care, (7) patients share in financial sources, (8) ownership, (9) main principles, (10) administration process, (11) advantages, (12) disadvantages.

3. Define, which health system model, health care of your country belongs to. Characterize financial mechanism of your country.
4. Define the budgeting concept. What are its primary purposes and benefits? (Write a short paragraph).
5. What are some of the budget types used within healthcare organizations? Briefly describe the purpose and use of each. How are the statistics budget, revenue and expense budgets, and operating budget related?
6. Analyze the principles of new program of Ukrainian health system reformation. Give your own opinion. Argue your answer.
7. Solve a problem.

Example of situation problem

Calculate amount of planned budget allocations for districts of the region, if:

1. Population of the 1st district is 100,000 people; population of the 2nd district is 200,000 people.

2. Amount of budgetary allocations for a district in the base period is 150 million UAH.

3. Need coefficient of citizens with health care in the planed period:
   - in 1st district is 5.5;
   - in 2nd district is 5.0;
   - in the region is 5.1.

Solution:

1) Determine standard of financial budget provision per 1 inhabitant per year in the region:
150 mln. : 300000 people. = 500 USD.

2) Determine coefficient of differentiation based on need coefficients of the citizens with health services:
District 1: 5.5: 5.1 = 1.08
District 2: 5.0: 5.1 = 0.98

3) Determine financial ratio of budget provision per 1 inhabitant per year by region:
District 1: 500 UAH. X 1.08 = 540 UAH.
District 2: 500 UAH. x 0.98 = 490 UAH.

4) Determine amount of budget allocations for districts:
District 1: 540 UAH. x 100 thousand. pers. = 54 million UAH.
District 2: 490 UAH. x 200 thousand people. = 98 million UAH.

Answer: Amount of budget allocations for districts: (1) District 1 is 54 mln. UAH.; (2) District 2 is 98 mln. UAH.

Content issue 4. Health insurance as the mechanism of healthcare system funding

Theme 8. Basics of health insurance

The studies' form is **lecture**, limited to 2 hours.

I. Actuality

Health systems have to come to terms with the ever-changing and often competing needs for financial resources. In order for the system to function at the proper level, it must have sufficient funds to invest in buildings and equipment, cover the costs of training personnel, and pay staff, purchase drugs and other consumables.

So, the most important task of financing system is to collect income and create financial pools. This task can be solved by implementing principles of insurance medicine.

II. The purpose of the lecture is to familiarize students with features of insurance medicine and basics of health insurance.

III. Lecture plan

1. Content, tasks and characteristics of insurance medicine and health insurance

2. Types of health insurance and their economical nature
3. Comparative analysis of compulsory and voluntary health insurance

IV. Theme methodology guidelines

It is necessary to distinguish two concepts (1) insurance medicine, and (2) health medical insurance.

Insurance medicine is a complex and utterly mobile system of goods-market relations in health care. It appears to be a type of "administrative medicine", in which a doctor works for the life, health, disability and long-term care insurance industry. The good in insurance medicine system is a competitive, qualified, and sufficient by volume medical service, caused by the health risk.

Health insurance is a type of insurance coverage that pays for medical and surgical expenses incurred by the insured. Health insurance can reimburse the insured for expenses incurred from illness or injury, or pay the care provider directly. It is often included in employer benefit packages as a means of enticing quality employees. The cost of health insurance premiums is deductible to the payer, and benefits received are tax-free.

From the organizational point of view, it is a system of organizational and financial measures, securing insurance medicine activity. From the economic point of view, it is a process of specific funds foundation, covering expenses on medical and other financial losses connected with health and work ability losses, and social activity disorder of a person.

Main terms of health insurance.

– *Health insurance subjects.* In health insurance terminology, the "provider" is a clinic, hospital, doctor, laboratory, health care practitioner, or pharmacy. The "insured" is the owner of the health insurance policy; the person with the health insurance coverage (p*olicyholder*).

– *Health insurance object* is an insurance risk connected with medical care expenses under the insured accident (occurrence).

– *Insured accident* is an accident that results in bodily injury during the period of an insurance policy. To the insured accident we can refer the following (1) partial disability, (2) total disability, (3) temporary disability, (4) steady disability, and (5) unplanned losses on changes of living conditions.

– *Peril* is the cause of loss or damage.

– *Risk* is the chance of a loss.

– *Underwriting* is the process of selecting risks for insurance, and determining how much to charge to insure these risks and which coverage to provide.

– *Policy* s the legal documents issued by the insurance company that outlines the terms and conditions of the insurance.

– *Premium* is the payment required to keep your insurance policy in force.

– *Claim* a person's request for payment by an insurer of a loss covered by a policy. (1) First-party claims are those to your own insurance company. Third-party-claims are those made by one person against another person's company.

– *Exclusion* is specific conditions or circumstances listed ith the policy that are not covered by the policy.

Principles of insurance:

1) utmost good faith ((a) insurer and the insured should have good faith to each other; (b) insurer must provide complete and accurate information; (c) the insurance contract must be signed by both parties in an absolute good faith or belief, or trust);

2) insurable interest (insured must have insurable interest in the subject matter of the insurance, e.g.);

3) principles of indemnity (it means security, protection and compensation given against damage, loss or injury);

4) principles of subrogation (it means substituting one creditor for another);

5) principle of loss minimization (it is the duty of the insured to take all possible step to minimize the loss to the insured items on the happening of the uncertain event);

6) principle of "causa proxima" ((a) the loss of the insured item can be caused by more than one cause in succession to another; (b) the item may be insured against some causes and tot against all causes; (c) in such causes the proximate/nearest cause of loss to be considered).

Health insurance classification.

Broadly speaking there are two types of health insurance:

– *Private health insurance* – (e.g., the CDC (Centers for Disease Control and Prevention), USA; 58% of Americans have some kind of private health insurance coverage.) – the health care system is heavily reliant on private health insurance.

– *Public (government) health insurance* – for this type to be called insurance, premiums need to be collected, even though the coverage is provided by the state (Examples of public health insurance in the USA is Medicare, which is a national federal social insurance program for people aged 65+ years as well as disabled people, and Medicaid which is funded jointly by the federal government and individual states (and run by individual states), SCHIP which is aimed at children and families who cannot afford private insurance, but to not qualify for Medicaid. Other public health insurance programs in the USA include TRICARE, the Veterans Health Administration, and the Indian Health Service).

Total health expenditure you can see in *Figure 10*.

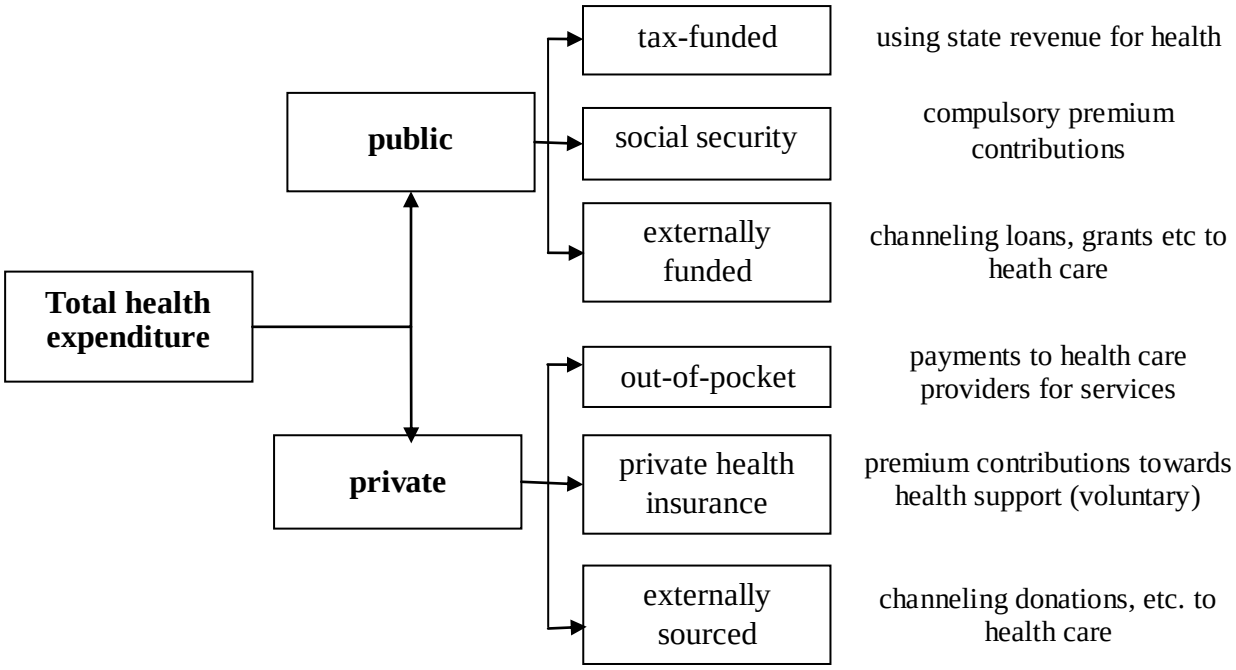

Figure 10. Health expenditure

From Figure 9 we can mark compulsory and voluntary health insurance. Comparative characteristics of these two types of health insurance are presented in *Table 5*.

Table 5.

Comparative analysis of compulsory and voluntary health insurance

Comparison criterion	Compulsory health insurance	Voluntary health insurance
Socio-economic	non-commercial	commercial
Insurance type	mass	individual, collective (family)
Realizes by insurance organizations	state	different property forms

Approves: insurance rules, guaranteeing minimum, tariffs, quality control system	state	insurance companies
Policy older	state, citizens	natural and legal persons
Financing sources	workers and employers contributions, state subsidies	private incomes of citizens, profits of natural and legal persons
Profit use	non-commercial activity	commercial and non-commercial activity

Another classification is based on the insurance object: (1) accidental death and dismemberment, (2) total permanent disability insurance, (3) vision insurance, (4) long term care insurance, (5) disability insurance, and (6) dental insurance.

V. Exercises

1. Describe principles of insurance medicine. (Write a short paragraph).
2. Make a comparative analysis of public and private health insurance. (Write a short paragraph).
3. Make a comparative analysis of compulsory and voluntary health insurance. (Write a short paragraph).
4. Describe health insurance of your country. Write an essay (minimum 3 pages).
5. Make a report on the following topics:
   1) Insurance medicine and health insurance
   2) Tasks and main features of insurance medicine
   3) Types of insurance policy
   4) Private and public health insurance
   5) Compulsory and voluntary health insurance
   6) Economic nature of health insurance

Theme 9. Procedures of insurance rate determination for voluntary health insurance

The studies' form is **practical classes**, limited to 2 hours.

I. Actuality

The insurance rate determines the financial stability of the insurance business. The insurance rates depend on the effectiveness of the insurance relationship between the insurer and the insured. The insurance rate forms an insurance fund for insurance payments.

Students' acquaintance with the methodology of determining the insurance rate for health insurance aims to form a strategic vision.

II. The purposes of the practical classes

Students must *know*:

1) concept of financial reliability of an insurer;
2) concept of insurance reserves;
3) concept of insurance rate;
4) concept of gross rate;
5) concept of the net rate.

Students must *be able*:

6) to determine the insurance rate and premium;
7) to determine the amount of insurance indemnity.

III. 1 hour is allocated for the **Individual Students' Work (ISW).**

Questions for self-control and discussing

1. Financial reliability of an insurer
2. Procedures of insurance rate and premium calculation

3. Insurance reserve

IV. Theme methodology guidelines

Insurance premium is the amount of money that an individual or business must pay for an insurance policy. The insurance premium is considered income by the insurance company once it is earned, and also represents a liability in that the insurer must provide coverage for claims being made against the policy.

Insurance premiums for services differ from company to company, so it is advisable that individuals shop around for insurance premiums. However, it is important to note that, sometimes, insurance premiums quoted are slightly different from the premiums charged. The difference between the quote and the actual charge can be attributed to the way the insurance premium is calculated. The amount of insurance premiums charged by the insurance companies is determined by statistics and mathematical calculations done by the underwriting department of the insurance company.

The level of insurance premium charged to a customer depends on statistical data that exists about life history, age and health. For example, an 18-year-old man who drives a red sports car is more likely to pay a higher insurance premium than a 50-year-old man who drives a four-door sedan. Every customer that applies for insurance goes through the underwriting process. The underwriting process involves investigation into familial diseases, analysis of reports like medical information bureau and motor vehicle reports. After the information is gathered and analyzed, they are typically analyzed by a statistician, called actuaries, hired by the insurance companies. After analyzing the data, the actuary tries to predict how likely the insurance applicant will make a claim on their policy. The higher the probability of a claim, the higher the premiums usually are.

The actuaries are also responsible for studying mathematical data and compiling "mortality and sickness" tables, which are used to predict prospective losses due to death and sicknesses. The mortality and sickness tables are basically tables that assign probability to gender and ages about the likelihood to get sick or die. The actuaries use these tables to develop models that determine how likely it is for a particular individual to get sick or die at a particular time, based on the data gathered for that individual. Based on the results of the analysis of data and the information generated from the mortality and sickness tables, a premium is assigned or charges to the client.

The level of the insurance premium should be sufficient (1) to cover the expected claims during the insurance period; (2) to create insurance reserves; (3) to cover the expenses of the insurance company for business management; (4) to ensure a certain amount of profit.

The upper limit of the price of insurance services is determined by two factors: (1) the size of the demand for it, and (2) the amount of bank's rate interest on deposits.

In addition, the size of the premium is influenced by factors such as: the size and structure of the insurance portfolio (the total number of risks taken for insurance), management expenses (income received from investing temporarily available funds).

Insurers use the insurance premium to cover the liabilities associated with the policies that they underwrite, as well as to invest the premium in order to generate higher returns. Insurers will invest the premiums in assets with varying levels of liquidity and return, with the amount of liquid assets often set by state insurance regulators. Regulators want to make sure that policyholders will be able to have their claims paid for, and thus require insurers to retain adequate reserves.

The tariff for compulsory insurance is established centrally in the legislative order. The tariff rate for voluntary insurance is calculated by the insurer independently and influences significantly on the financial stability of insurance operations.

The calculation of insurance premiums is based on the tariff rate (insurance rate).

Insurance rate is the insurance contribution rate or the insurance premium expressed in monetary units, paid from the insured sum unit. In other words, tariff rate is a price of insurance risk and other expenses necessary for the carrying out of an insurer's obligations.

The structure of the insurance rate, usually called the gross rate, is represented in *Figure 11*.

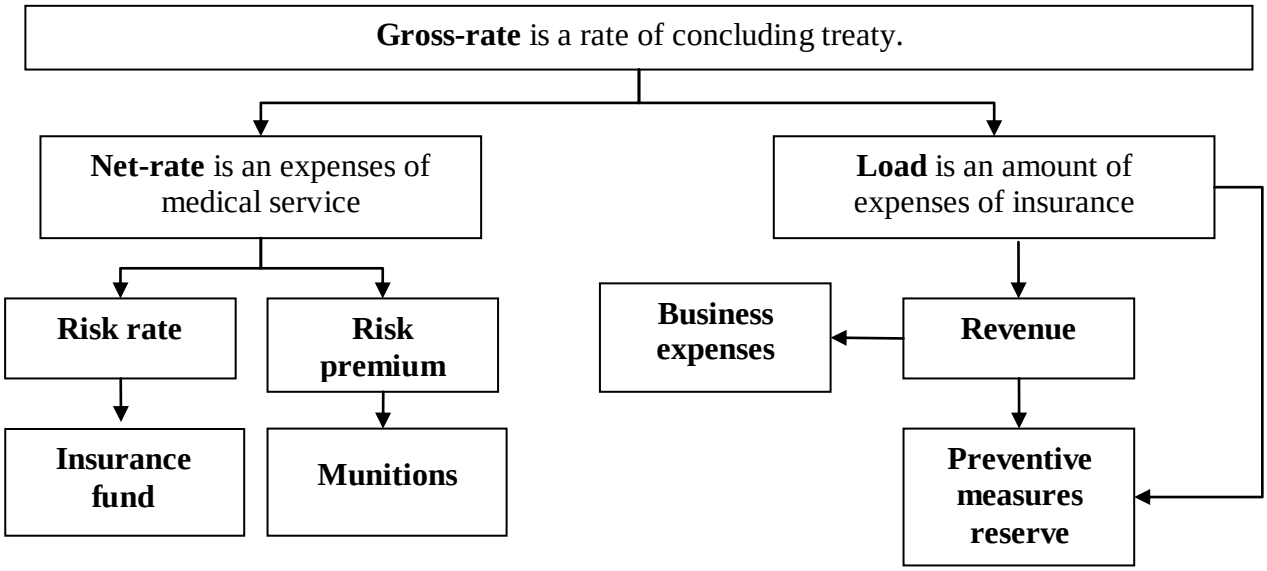

Figure 11. Structure of insurance rate

Net-rate is a part of the insurance tariff, which is aimed at the formation of insurance reserves for subsequent payments under insurance contracts. The net-rate includes a risk rate and a risk premium. Due to the *risk rate*, which is the basis of the tariff, insurance reserves are formed, from which insurance payments are made. *Risk premium* forms a reserve fund in case of the actual number of insured events exceeds the estimated amount. If the policy includes several different insured events, then the net-rate is calculated separately for each risk.

Depending on the method of forming the insurance fund and calculating the tariff, insurance is divided into: (1) Risk-related (types of insurance activities that differs from life insurance that do not cover the obligations of the insurer for the payment of the insurance amount at the end of the validity period of the insurance contract, not related to the accumulation of the insurance amount during the term of the insurance contract); and (2) cumulative (the insurance conditions provide for payment both during survival of the insured person before the end of the insurance period, and in the event of his death during the term of the contract).

When calculating the contribution to life insurance, the net rate additionally includes the accumulative component, at the expense of which the insurance amount is accumulated, which is payable at the end of the insurance period.

Load is a part of the tariff, which includes the expenses of the case, the expenses of creating a preventive measures fund and the insurer's profit from the operation.

V. Exercises

1. Solve a problem.

Example of situation problem

According to the insurance contract insurance tariff rate (gross rate) is determined in the amount of 655 UAH, including cost of outpatient and inpatient services (net insurance) in the amount of 400 UAH, overhead expenses are 180 UAH and profit is 75 UAH.

What will be the size of the insurance rate (gross rate), if the profitability of insurance plan is planned at 20.0% in relation to the cost of insurance?

Solution:

1) There was 655 = 400 + 180 + 75

2) Taking into account changes, the value of gross rates will be: Net insurance (400 USD) + Load 180 UAH + Profit 580 x 0.2 = 580 UAH + 116 UAH = 696 UAH.

Answer: 696 UAH.

Content issue 5. Medical organization's efficiency analysis and appraisement

Theme 10. Business activity in health care and stomatology

The studies' form is **lecture**, limited to 2 hours.

I. Actuality

The healthcare industry is booming. As technology has improved and become more widely available, many companies are moving into health care or healthcare-adjacent fields, driven by entrepreneurs who see the value of this emerging market. At the same time, healthcare companies are becoming more numerous and experiencing an unprecedented level of competition. Many are starting to embrace entrepreneurial habits as a means of survival.

Going forward, it appears that entrepreneurship and health care are linked and that they will continue to be connected for some time.

II. The purpose of the lecture is to familiarize students with the content, characteristics and types of organizational and legal forms of entrepreneurial activity in healthcare field.

III. Lecture plan

1. Essence of entrepreneurship and regulation of entrepreneurial activity in Ukraine
2. Types of organizational and legal forms of entrepreneurial activity in health care and their characteristics

IV. Theme methodology guidelines

Three *main tendencies* are observed in the process of health care and business bonding.

1. Business practices drive the healthcare industry.

One of the biggest ways entrepreneurship and health care are related is how business practices are driving the industry. Healthcare providers use business concepts to get ahead, which is disrupting traditional health care. Market incentives are pushing experienced entrepreneurs and investors into the healthcare industry, and they are finding a welcome market, open to new ideas and technologies. At the same time, health care is becoming less directed and more open as the industry embraces a patients-as-consumers mindset. Healthcare providers have to respond by marketing services.

2. New payment models reward value.

Traditional clinical models like the fee-for-service models health care employed over recent decades, making money on how many patients are seen, are rapidly disappearing. New population management models reward healthcare providers for keeping patients healthy, as opposed to allowing them to make money off only sick people. Changing this focus changes the scope of treatment. Now preventing illness is key, and avoiding unnecessary treatment is the rule. Entrepreneurial healthcare workers are using this shift to introduce health-preserving measures, techniques, systems, and novelties, like wearable technologies and fitness apps. This creates a universe of highly profitable products and services adjacent to health care that are not under the sole direction of medical professionals, health insurance companies, or treatment centers.

3. Technology moves modern healthcare system.

Technology is changing modern health care. Entrepreneurial-minded healthcare professionals are applying predictive data and analytical tools to anticipate healthcare needs in a community, ensure care is adequate and necessary, and make statistical predictions about the care that will be required next. They are also exposing and correcting inefficiencies in traditional health care and making new models based on what works.

Technology is also gaining bigger roles as decision-making tools within the healthcare industry get a foothold, be it a wearable technology that documents patient experiences or websites that allow patients to access their own lab work. There is also the need for integrated data solutions now that so much data is available about patient histories, lab work, hereditary

issues, and treatment successes that a systematic solution to support decision-making is practically required.

Entrepreneurship and health care are linked, and the bonds between the two are growing deeper as business practices drive the healthcare industry into a wellness industry. In turn, value-oriented payment models reward that focus and technology perpetuates the cycle. Entrepreneurship is moving health care forward, and the industry has to evolve to keep pace.

Entrepreneurship is an independent, systematic activity of production, execution of works, provision of services, undertaking and assuming the risk for the sake of profit. It is carried out by natural and legal persons registered as subjects of entrepreneurial activity in accordance with the procedure established by state law.

Entrepreneurial activities are substantially different depending on the type of organization and creativity involved.

Entrepreneurship differs from solo projects (even involving the entrepreneur only part-time) to major undertakings creating many job opportunities. Many "high value" entrepreneurial ventures seek venture capital (is financing that investors provide to startup companies and small businesses that are believed to have long-term growth potential) or angel funding (seed money; Angel investors are focused on helping startups take their first steps, rather than the possible profit they may get from the business. Essentially, angel investors are the opposite of venture capitalists) in order to raise capital to build the business.

Risks of entrepreneurship are the following: (1) potential business failure; (2) unexpected obstacles; (3) financial insecurity; (4) extra work. Risk of an entrepreneurial venture is always high.

Entrepreneurial activity is always related to *innovations* (the process of translating an idea or invention into a good or service that creates value or for which customers will pay), such as (1) new products (services), (2) new production methods (services procedures), (3) new markets, (4) new forms of organization. Wealth is created when such innovation results in new demand.

So, one can define the *main function of the entrepreneurial activity* as combining various input factors on an innovative manner to generate value to the customer with hope that this value will exceed the cost of the input factors, thus generating superior returns that result in the creation of wealth. Other functions of entrepreneurial activity are: (1) it promotes capital formation and creates wealth in country; (2) it accelerates economic growth of the country; (3) it reduces unemployment and poverty; (4) it is a process of exploring opportunities in the market place and arranging resources required to exploit these opportunities for long term gain.

Principles of entrepreneurial activity are the following: (1) orientation on consumer's wants; (2) active search for innovations; (3) development and realization of unordinary projects; (4) use of competitive benefits; (5) constant need for self-actualization and own goal achievement; (6) following the rules of business ethics.

Entrepreneurship in health care is an intellectual activity aimed at obtaining the maximum result due to the organization and use of resources in order to strengthen and improve the health of the population.

The specificity of entrepreneurship in health care is that the main purpose and result of the professional activity of medical and pharmaceutical workers is related to human, his life and health, therefore, it is strictly controlled and regulated by the state.

Entrepreneur is an individual, who runs a business and takes risk. In Ukraine, entrepreneurs may be citizens of Ukraine or another state or stateless person, legal entities of all forms of ownership or their associations, which carry out entrepreneurial activity in Ukraine within the limits of the current legislation.

Entrepreneurial medical and pharmaceutical activities can be carried out by persons who have special medical education and meet the uniform qualification requirements established by the Ministry of Health of Ukraine. Foreign citizens who have completed medical and pharmaceutical educational establishments abroad are admitted to professional activity after

checking their professional qualifications of the Ministry of Health of Ukraine and the availability of necessary documentation (diploma on medical education, certificate of advanced training for the last 5 years, certificate of approving the relevant qualification category, certificate of specialist).

State control and supervision of entrepreneurial activity in the healthcare field are carried out by the Ministry of Health of Ukraine and the Crimean Autonomous Republic, the Licensing Chamber under the Ministry of Economy of Ukraine, region department of healthcare, Kyiv and Sevastopol municipal administrations, and other bodies.

Medical practice is a specific type of activity that is subject to licensing in accordance with the Law of Ukraine "On Licensing Types of Economic Activities". For conducting medical practice without obtaining a license, the current legislation provides for administrative, criminal and civil liability.

Subjects of business activity are (1) legal persons (establishments, organizations, etc.), and (2) natural persons (citizens).

Classification of medical enterprises by:

1) form of organization: (a) personal (individual), (b) company or partnership, (c) corporation;
2) form of property: (a) state, (b) municipal, (c) collective, (d) private, (e) enterprise with foreign investments, (f) foreign enterprise, (g) enterprise with mixed property form;
3) activities' purpose: (a) non-commercial, and (b) commercial;
4) volume of economic turnover and employees amount: (a) small, (b) middle, (c) large;
5) form of responsibility: (a) limited liability company, (b) supplemental liability company, (c) full company, (d) commanded company;
6) way of joining: (a) association, (b) corporation, (c) concern, (d) consortium, (e) general enterprise;
7) way of property formation: (a) unitarian, and (b) corporative.

V. Exercises

1. How technologies and innovations change healthcare industry? Write an essay (min 3 pages).
2. Analyze main business practices, which are used in healthcare field. Characterize them.
3. Define, what it means to be an entrepreneur? Compare the pros and cons of being an entrepreneur in healthcare field? Identify successful entrepreneurs in health care and their achievements. Write an essay (min 3 pages).
4. Describe who becomes an entrepreneur. List the key characteristics and skills of an entrepreneur. (Write short paragraph).
5. Explore ways to build your own business in health care in your country.
6. What are the forms of business organization. How do they differ? Make a comparative analysis.
7. Make a comparative analysis of different types of partnerships.
8. Make a comparative analysis of different types of corporations.
9. Make a report on the following topics:
   1) Economic nature of entrepreneurship
   2) Role of business activity in health care
   3) Medical enterprise: its main organizational and economic forms
   4) Commercial organization
   5) Non-commercial organization
   6) Legal forms of enterprises

Theme 11. Methodology of business plan formation for the organization of entrepreneurial activity in the healthcare field

The studies' form is **seminar**, limited to 2 hours.

I. Actuality

The business of medicine becomes more challenging each day. Throughout the country, physicians are experiencing organizational changes in the delivery system, reimbursement for demonstrated value rather than quantity of care, enhanced technology, and an ever-changing regulatory environment. Strategic business planning is more important than ever.

II. The purposes of the seminar

Students must *know*:

1) essence of business planning;
2) structure of business plan;

Students must *be able*:

3) to write a business plan for medical or stomatological establishment.

III. 2 hours are allocated for the **Individual Students' Work (ISW).**

Questions for self-control and discussing

1. Strategic business planning in health care
2. Structure of business plan
3. Marketing plan
4. Financial plan
5. Organizational plan

IV. Theme methodology guidelines

A business plan is a written description of your business's future, a document that tells what you plan to do and how you plan to do it. It is a written document describing the nature of the business, the sales and marketing strategy, and the financial background, and containing a projected profit and loss statement.

The trend in business planning these days is to go back to the fundamentals, with good projections and solid analysis. An "easy to read quickly" format is important principle of its working out. It mustn't be confused with a doctoral thesis or a lifetime task. Its wording and formatting must be straightforward, and the plan is short.

Potential benefits of strategic business planning. Without a formal process to identify your mission, values, goals, projects, timing, barriers, opportunities, and strategies, entrepreneur could miss good opportunities and make serious and expensive mistakes.

A well-structured strategic business planning process can help medical business practice in both the short and the long term. (1) Immediate value. First, strategic business planning provides clear direction, preventing the haphazard occurrence of activities that may actually work against each other. Second, the process offers an opportunity for practice owners, managers, and other workforce members to collaborate in setting the future direction of the practice. Participation in planning enhances the likelihood of successful implementation of agreed upon projects and priorities. Third, it allows the practice to set priorities. Everything can't be done simultaneously, so consensus on a logical order makes more sense than launching multiple initiatives simultaneously. Fourth, strategic business planning offers the potential for enhanced financial performance. Fifth, clarity of focus can improve the quality of patient care. (2) Short-term benefits. Strategic business planning has great long-term value. After it's done, a practice can use it as the benchmark against which to measure progress in achieving agreed upon goals. New opportunities for program expansion and operational improvement can also be vetted against the plan for consistency.

Strategic business planning process must be started with an assessment of all aspects of current practice by asking next questions:

– Mission: is your mission statement current, and does it accurately reflect the practice's direction for the next 5-10 years?

– Values: what is important to your practice, and do you deliver care, interact with patients and colleagues, and manage your workforce in ways that are consistent with those values?

– Strengths, Weaknesses, Opportunities, and Threats (S.W.O.T.): given your practices, mission and values, in what areas do you excel? Where are you weak? What opportunities and threats to those opportunities do you see?

– Goals: what are the practice's specific goals with respect to organization and management, financial management, human resources, marketing, information technology, operations, quality initiatives, and compliance? Have the owners and senior managers reached consensus on those goals? Have you made progress toward reaching the goals?

– Projects: within each category listed under goals, what are your major projects, and have you prioritized them? Plans come with a price tag; have you estimated the estimated cost of each project? Do workforce members have the ability and time to accomplish the projects on your list?

– Barriers, Opportunities, and Strategies for Each Project: be honest about the hurdles, opportunities, and ways to get where you want to go. Two barriers that often impede progress are lack of staff time to do a project or lack of internal skill to do something that's not been done before.

Business plan consists of seven *key components*: (1) executive summary, (2) business description, (3) market strategies, (4) competitive analysis, (5) design and development plan, (6) operations and management plan, (7) financial factors. In addition to these sections, a business plan should also have a cover, title page and table of contents.

1. *Executive summary*. Key elements that should be included are: (a) *Business concept* describes the business, its product and the market it will serve. It should point out just exactly what will be sold, to whom and why the business will hold a competitive advantage. (b) *Financial feature* highlights the important financial points of the business including sales, profits, cash flows and return on investment. (c) *Financial requirements* states the capital needed to start the business and to expand. (d) *Current business position* furnishes relevant information about the company, its legal form of operation, when it was formed, the principal owners and key personnel. (e) *Major achievements* includes items like patents, prototypes, location of a facility, any crucial contracts that need to be in place for product development, or results from any test marketing that has been conducted.

2. *Business description* usually begins with a *short description of the industry*, describes its present outlook as well as future possibilities. It also provides information on all the various markets within the industry, including any new products or developments that will benefit or adversely affect your business.

When describing business model, the first thing that should be emphasized is its *structure*. By structure we mean the type of operation, i.e. wholesale, retail, food service, manufacturing or service-oriented. Also it must be stated whether the business is new or already established.

In addition to structure, *legal form* should be reiterated. Also it must be mentioned *4p's of marketing:* who you will sell to, how the product will be distributed, and the business's support systems. Support may come in the form of advertising, promotions and customer service. Once you've described the business, you need to *describe the products or services* you intend to market. The product description statement should be complete enough to give the reader a clear idea of your intentions; it must be emphasized any unique features or variations from concepts that can typically be found in the industry.

3. *Market strategies* are the result of a meticulous *market analysis*. A market analysis forces the entrepreneur to become familiar with all aspects of the market so that the *target market* can be defined and the company can be positioned in order to garner its share of sales. A market analysis also enables the entrepreneur to establish pricing, distribution and promotional strategies that will allow the company to become profitable within a competitive

environment. In addition, it provides an indication of the growth potential within the industry, and this will allow you to develop your own estimates for the future of your business.

In this part *market share projecting* must be done. It's based on not only an analysis of the market but on highly targeted and competitive distribution, pricing and promotional strategies. In order to project market share over the time frame of the business plan, two factors must be considered: (1) industry growth which will increase the total number of users and will most likely include industry sales, industry segment sales, demographic data and historical precedence; and (2) conversion of users from the total feasible market; this is based on a sales cycle similar to a product life cycle where you have five distinct stages: early pioneer users, early users, early majority users, late majority users and late users.

Important part of market strategy is *business positioning*. A positioning statement for a business plan doesn't have to be long or elaborate. It should merely point out exactly how entrepreneur wants his product perceived by both customers and the competition.

Another part is *pricing* (*see* Theme 6).

Distribution includes the entire process of moving the product from the company to the end user. The type of distribution network you choose will depend upon the industry and the size of the market. Some of the more common distribution channels include (1) direct sales, (2) OEM (original equipment manufacturer) sales, (3) manufacturer's representatives, (4) wholesale distributors, (5) brokers, (6) retail distributors, and (7) direct mail.

Promotion plan is the controlled distribution of communication designed to sell your product or service. In order to accomplish this, the promotion strategy encompasses every marketing tool utilized in the communication effort. This includes: (1) advertising, (2) packaging, (3) public relations, (4) sales promotions, and (5) personal sales.

Sales potential has the revenue project for up to 5 years.

4. *Competitive analysis* is a statement of the business strategy and how it relates to the competition. The purpose of the competitive analysis is to determine the strengths and weaknesses of the competitors within your market, strategies that will provide you with a distinct advantage, the barriers that can be developed in order to prevent competition from entering your market, and any weaknesses that can be exploited within the product development cycle.

5. *Design and development plan*. The purpose of this section is to provide investors with a description of the product's design, chart its development within the context of production, marketing and the company itself, and create a development budget that will enable the company to reach its goals. There are generally three areas must be covered in this section: (a) product development, (b) market development, and (3) organizational development.

The first step in the development process is *setting goals* for the overall development plan. Goals for product development should center on the technical as well as the marketing aspects of the product so that you have a focused outline from which the development team can work.

With goals set and expertise in place, it must be formed *a set of procedural tasks or work assignments* for each area of the development plan. Procedures will have to be developed for product development, market development, and organization development. In some cases, product and organization can be combined if the list of procedures is short enough. Procedures should include how resources will be allocated, who is in charge of accomplishing each goal, and how everything will interact.

Next stage is *scheduling and costs*. This is one of the most important elements in the development plan. Scheduling includes all of the key work elements as well as the stages the product must pass through before customer delivery. It should also be tied to the development budget so that expenses can be tracked. But its main purpose is to establish time frames for completion of all work assignments and juxtapose them within the stages through which the product must pass.

That leads to the *development budget* working out. When forming your development budget, you need to take into account all the expenses required to design the product and to take

it from prototype to production. Costs that should be included in the development budget include: (1) material, (2) direct labor, (3) overhead (i.e., taxes, rent, phone, utilities, office supplies, etc.), (4) G&A costs (i.e. the salaries of executive and administrative personnel along with any other office support functions), (5) marketing and sales (e.g. the salaries of marketing personnel), (6) professional services (i.e. costs associated with the consultation of outside experts such as accountants, lawyers, and business consultants), (7) miscellaneous costs (related to product development), and (8) capital equipment.

Personnel is one of the key part of business plan. We have to ask next questions: (a) which areas within the development process will require the addition of personnel; and (b) which positions need to be filled. Then *a job description* and *job specification* must be produced. And, finally, the process of personnel interrelating.

Finally, the *risks* involved in developing the product should be assessed and a plan developed to address each one. The risks during the development stage will usually center on technical development of the product, marketing, personnel requirements, and financial problems.

6. *Operations and management plan* is designed to describe just how the business functions on a continuing basis. The operations plan will highlight the logistics of the organization such as the various responsibilities of the management team, the tasks assigned to each division within the company, and capital and expense requirements related to the operations of the business. In fact, within the operations plan the next set of financial tables that will supply the foundation for the "Financial Components" section must be developed: (a) the operating expense table, (b) the capital requirements table, and (c) the cost of goods table.

The *organizational structure of the company* is an essential element within a business plan because it provides a basis from which to project operating expenses. This is critical to the formation of financial statements, which are heavily scrutinized by investors; therefore, the organizational structure has to be well-defined and based within a realistic framework given the parameters of the business. Although every company will differ in its organizational structure, most can be divided into several broad areas that include: (a) marketing and sales (includes customer relations and service), (b) production (including quality assurance), (c) research and development, and (d) administration.

Personnel number calculation. In order to determine the number of employees you'll need to meet the goals you've set for your business, you'll need to apply the following equation to each department listed in your organizational structure:

$$P = {}^{C}/_{S} \tag{8}$$

In this equation, C represents the total number of customers, S represents the total number of customers that can be served by each employee, and P represents the personnel requirements.

Once you calculate the number of employees that you'll need for your organization, you'll need to determine the labor expense. The factors that need to be considered when calculating labor expense (LE) are the personnel requirements (P) for each department multiplied by the employee salary level (SL). Therefore, the equation would be:

$$LE = P \times SL \tag{9}$$

Overhead expenses calculating. The expenses associated with the operation of the business must be developed. Expenses can be divided into fixed (those that must be paid, usually at the same rate, regardless of the volume of business) and variable or semivariable (those which change according to the amount of business). Overhead expenses usually include the following: travel, maintenance and repair, equipment leases, rent, advertising and promotion, supplies,

utilities, packaging and shipping, payroll taxes and benefits, uncollectible receivables, professional services, insurance, loan payments, depreciation.

In order to develop the overhead expenses for the expense table used in this portion of the business plan, you need to multiply the number of employees by the expenses associated with each employee. Therefore, if NE represents the number of employees and EE is the expense per employee, the following equation can be used to calculate the sum of each overhead (OH) expense:

$$OH = NE \times EE \tag{10}$$

Capital requirement table depicts the amount of money necessary to purchase the equipment you'll use to establish and continue operations. It also illustrates the amount of depreciation your company will incur based on all equipment elements purchased with a lifetime of more than one year.

7. *Financial components* are a cash flow statement, an income statement and a balance sheet.

The *income statement* is a simple and straightforward report on the proposed business's cash-generating ability. For a business plan, the income statement should be generated on a monthly basis during the first year, quarterly for the second, and annually for each year thereafter. It's formed by listing your financial projections in the following manner:

1. *Income*. Includes all the income generated by the business and its sources.
2. *Cost of goods*. Includes all the costs related to the sale of products in inventory.
3. *Gross profit margin*. The difference between revenue and cost of goods. Gross profit margin can be expressed in dollars, as a percentage, or both. As a percentage, the GP margin is always stated as a percentage of revenue.
4. *Operating expenses*. Includes all overhead and labor expenses associated with the operations of the business.
5. *Total expenses*. The sum of all overhead and labor expenses required to operate the business.
6. *Net profit*. The difference between gross profit margin and total expenses, the net income depicts the business's debt and capital capabilities.
7. *Depreciation*. Reflects the decrease in value of capital assets used to generate income. Also used as the basis for a tax deduction and an indicator of the flow of money into new capital.
8. *Net profit before interest*. The difference between net profit and depreciation.
9. *Interest*. Includes all interest derived from debts, both short-term and long-term. Interest is determined by the amount of investment within the company.
10. *Net profit before taxes*. The difference between net profit before interest and interest.
11. *Taxes*. Includes all taxes on the business.
12. *Profit after taxes*. The difference between net profit before taxes and the taxes accrued. Profit after taxes is the bottom line for any company.

The cash-flow statement is one of the most critical information tools for your business, showing how much cash will be needed to meet obligations, when it is going to be required, and from where it will come. It shows a schedule of the money coming into the business and expenses that need to be paid. The result is the profit or loss at the end of the month or year. In a cash-flow statement, both profits and losses are carried over to the next column to show the cumulative amount.

The cash-flow statement should be prepared on a monthly basis during the first year, on a quarterly basis during the second year, and on an annual basis thereafter. Items that are needed to include in the cash-flow statement and the order in which they should appear are as follows:

1. *Cash sales*. Income derived from sales paid for by cash.
2. *Receivables*. Income derived from the collection of receivables.

3. *Other income*. Income derived from investments, interest on loans that have been extended, and the liquidation of any assets.

4. *Total income*. The sum of total cash, cash sales, receivables, and other income.

5. *Material/merchandise*. The raw material used in the manufacture of a product (for manufacturing operations only), the cash outlay for merchandise inventory (for merchandisers such as wholesalers and retailers), or the supplies used in the performance of a service.

6. *Production labor*. The labor required to manufacture a product (for manufacturing operations only) or to perform a service.

7. *Overhead*. All fixed and variable expenses required for the production of the product and the operations of the business.

8. *Marketing/sales*. All salaries, commissions, and other direct costs associated with the marketing and sales departments.

9. *R&D*. All the labor expenses required to support the research and development operations of the business.

10. *G&A*. All the labor expenses required to support the administrative functions of the business.

11. *Taxes*. All taxes, except payroll, paid to the appropriate government institutions.

12. *Capital*. The capital required to obtain any equipment elements that are needed for the generation of income.

13. *Loan payment*. The total of all payments made to reduce any long-term debts.

14. *Total expenses*. The sum of material, direct labor, overhead expenses, marketing, sales, G&A, taxes, capital and loan payments.

15. *Cash flow*. The difference between total income and total expenses. This amount is carried over to the next period as beginning cash.

16. *Cumulative cash flow*. The difference between current cash flow and cash flow from the previous period.

The last financial statement you'll need to develop is *the balance sheet*. Like the income and cash-flow statements, the balance sheet uses information from all of the financial models developed in earlier sections of the business plan; however, unlike the previous statements, the balance sheet is generated solely on an annual basis for the business plan and is, more or less, a summary of all the preceding financial information broken down into three areas: (1) assets, (2) liabilities, (3) equity.

Assets are classified as current assets and long-term or fixed assets. Current assets are assets that will be converted to cash or will be used by the business in a year or less. Current assets include:

– *Cash*. The cash on hand at the time books are closed at the end of the fiscal year.

– *Accounts receivable*. The income derived from credit accounts. For the balance sheet, it's the total amount of income to be received that is logged into the books at the close of the fiscal year.

– *Inventory*. This is derived from the cost of goods table. It's the inventory of material used to manufacture a product not yet sold.

– *Total current assets*. The sum of cash, accounts receivable, inventory, and supplies.

– Other assets that appear in the balance sheet are called long-term or fixed assets. They are called long-term because they are durable and will last more than one year. Examples of this type of asset include:

– *Capital and plant*. The book value of all capital equipment and property (if you own the land and building), less depreciation.

– *Investment*. All investments by the company that cannot be converted to cash in less than one year. For the most part, companies just starting out have not accumulated long-term investments.

– *Miscellaneous assets*. All other long-term assets that are not "capital and plant" or "investments".

– *Total long-term assets*. The sum of capital and plant, investments, and miscellaneous assets.

– *Total assets*. The sum of total current assets and total long-term assets.

After the assets are listed, the *liabilities* must be accounted. Like assets, liabilities are classified as current or long-term. If the debts are due in one year or less, they are classified as a current liabilities. If they are due in more than one year, they are long-term liabilities. Examples of current liabilities are as follows:

– *Accounts payable*. All expenses derived from purchasing items from regular creditors on an open account, which are due and payable.

– *Accrued liabilities*. All expenses incurred by the business which are required for operation but have not been paid at the time the books are closed. These expenses are usually the company's overhead and salaries.

– *Taxes*. These are taxes that are still due and payable at the time the books are closed.

– *Total current liabilities*. The sum of accounts payable, accrued liabilities, and taxes.

Long-term liabilities include:

– *Bonds payable*. The total of all bonds at the end of the year that are due and payable over a period exceeding one year.

– *Mortgage payable*. Loans taken out for the purchase of real property that are repaid over a long-term period. The mortgage payable is that amount still due at the close of books for the year.

– *Notes payable*. The amount still owed on any long-term debts that will not be repaid during the current fiscal year.

– *Total long-term liabilities*. The sum of bonds payable, mortgage payable, and notes payable.

– *Total liabilities*. The sum of total current and long-term liabilities.

Once the liabilities have been listed, the final portion of the balance sheet-owner's equity-needs to be calculated. The amount attributed to owner's equity is the difference between total assets and total liabilities. The amount of equity the owner has in the business is an important yardstick used by investors when evaluating the company. Many times it determines the amount of capital they feel they can safely invest in the business.

V. Exercises

1. Work out a business plan for your further medical (stomatological) activity by using following positions.

GENERAL INFORMATION

- **Mission:** Why are you investigating the feasibility of setting up your own practice? If you decide to go forward, how would you like your practice to look in five – ten years?
- **Values:** Successful medical practices are value driven. In a few words, what are the personal and professional values that you want to demonstrate in your new practice?
- **Goals:** What are your goals with respect to the scope of services that you provide, the size of your clinical and administrative team, and the number of locations?
- **Legal Issues:** What corporate structure will the practice have?
- **SWOT:** From your perspective, what are the strengths that you bring, your weaknesses, the opportunities, and the threats to opening a new practice in your specialty in the geographic area you have selected?
- **Time Frame:** What services will you provide at the outset and over time as you grow the practice?
- **Anticipated Start Date**: When would you like to begin seeing patients in your new practice?

- **Depreciation of capital equipment:** 5 years (60 months).
- **Days revenue outstanding:** We will use an average.
- **Days payable outstanding:** We will use an average.

REVENUE

- **Non-Patient Revenue (if any):** Will you generate income from teaching, clinical research, or any other sources beside patient revenue?
- **Volume of Clinical Services:** We will build up the volume of new and existing patient visits over time. Provide your anticipated annual vacation time, time out of the office for professional education, and expected number of holidays.
- **Gross Revenue by Type of Service:** Given your specialty, we expect that you will provide in-office care and not do procedures at other locations. What E & M codes will you use most frequently? Will you do any testing in the office, and if so, what?
- **Payers:** Identify the public and private payers with which you will have contracts.
- **Special Relationships:** Will you participate in an Accountable Care Organization (ACO)?
- **No inflation for revenue, given uncertainty of reimbursement environment**
- **Contractual Allowance and Allowance for Bad Debts:** 50% gross revenue

EXPENSES

- **Accounting:** Ask your CPA to estimate the cost for providing assistance at start-up and on an annual basis.
- **Advertising and Public Relations: See Marketing**
- **Billing and Collections (Outsourced):** Some practices outsource billing and collection to an external vendor. Are you considering this option? If so, we'll estimate the annual cost as a percentage of net revenue.
- **Books and Subscriptions:** Estimate the annual cost for years 1-5.
- **Contributions and Public Relations:** Estimate the annual cost for years 1-5.
- ***Consulting Fees:** Items in this category include practice management consultation, IT support, credentialing, and any other consultants that you expect to engage in years 1-5.
- **Continuing Medical Education:** Estimate the annual cost for years 1-5.
- **Capital Equipment:** Develop an itemized list and obtain vendor estimates.
- **Coverage:** Will you share call with another physician?
- **Dues for Professional Societies and Hospital Privileges**: Identify the professional societies to which you will belong and the annual dues for each; identify the hospitals to which you will admit patients and the annual dues for each. If you belong to an ACO, add the annual dues**.**
- **General Business Liability Insurance:** Obtain several estimates of the monthly cost.
- **Information Technology:** Although you don't need to select an IT vendor for purposes of strategic business planning, obtain estimates from several companies that you anticipate investigating.
- **Lab Fees:** if you are doing testing in the office, what are the fees?
- **Lab Interfaces:** Depending on the E H R vendor that you select, you may need to purchase an interface.
- **Legal Services:** Ask your attorney to estimate start-up costs and the annual cost for legal services in years 2-4.
- **Loan payments and interest:** If you borrow money, assume a 5.5% interest rate.
- **Maintenance, Repairs, and Cleaning:** Estimate the cost/square foot.
- **Malpractice Insurance:** Estimate the annual cost.
- **Marketing, Advertising, and PR:** Estimate the cost in year 1 and subsequent years, allowing for creation of your logo, business cards, announcement of your opening, forms, other printed materials and website design. The cost of website programming is a separate item.

- **Medical Supplies:** Include the initial purchase in capital expenses and estimate a monthly cost going forward.
- **Miscellaneous:** Add a cushion for unexpected expenses.
- **Office Supplies:** Estimate the monthly cost.
- **Rental/Lease Expenses:** Estimate the monthly rent and up-fit cost if there is one.
- **Salaries, Wages, and Benefits:** Identify the workforce members that you will hire at the outset and over time, and we'll use salaries from our state survey. If you provide benefits, add 30%.
- **Taxes – Payroll** - included in salaries/wages/benefits above
- **Taxes –** Probably none given legal structure of practice
- ***Telephone/Telecommunications:** Obtain estimates from several companies.
- **Travel:** included in CME category – none in Year 1 and will be in-state in years 2-5.
- **Equipment rental, copiers, postage:** Insert monthly cost.
- **Depreciation (Building and Equipment)**: 5 years
- **Professional Services:** If you will purchase any other professional services, add them here.
- **Website:** Assuming that the Website has 6-8 pages with a link to a secure patient portal, the cost for building, hosting, domain name, email set-up, and project management is approximately $x,xxx.xx. In subsequent years, the annual cost for hosting and domain is $xxx.xx, and the annual cost for updating Expression Engine (the tool that let's you update your own website) is $xxx.xx. The annual cost for website updating in years 2-4 is $xxx.xx.
- **Patient Portal:** There are two options for creating a secure patient portal that allows patients to communicate directly with your practice by selecting a user name and password. One option is to purchase the patient portal from the same vendor from which you purchase your EHR. This is the preferable option because the portal will be integrated with the EHR, and information can easily move from one to the other. A second option is to purchase a portal that is not integrated with the EHR from a company that develops the portal.
- **Other Expenses:** Some practices offer employee bonuses and tuition support. Add those amounts here if you choose to do so.
- **Physician Monthly Draw:** $xxx.xx/year

Theme 12. Appraisement procedures of medical, social and economic effectiveness in healthcare system

The studies' form is **practical classes**, limited to 2 hours.

I. Actuality

The problem of the medical institutions' effectiveness occupies an important place among the urgent problems of health economics. Its interest arises at different levels of economic management (from owners of private medical clinics to government leaders). In particular, introduction of new medical technologies, medicines and patient-care items, replacing old medical devices and instruments with new ones is envisaged at the legislative level, wide computerization of medical organizations' departments and offices is planned, which will promote improvement of medical services quality and the health institutions' efficiency.

Students must be got to know with the appraisement methodology of the medical, social and economic efficiency of the healthcare institutions. It is aimed at forming a systematic vision and analytical thinking for students with purpose of the healthcare system's priority directions forming and the rational use of limited resources. It should lead to improve health indicators of the population.

II. The purposes of the practical classes

Students must *know*:

1) concept of social, medical and economic efficiency;
2) principles of social, medical and economic efficiency analysis;
3) appraisement approaches of the medical institution's social, medical and economic efficiency;
4) concept of economic effect;
5) concept of economic damage;
6) concept and procedures of pharmaco-economic analysis.

Students must *be able*:

7) to calculate the economic effect of health care;
8) to calculate the economic loss in the healthcare sector;
9) to calculate the social, medical and economic efficiency of a medical organization;
10) to calculate alternative of medical intervention.

III. 1 hour is allocated for the **Individual Students' Work (ISW).**

Questions for self-control and discussing

1. Essence of economic analysis in health care
2. Medical, social and economic effectiveness of medical enterprise
3. Factors influencing efficiency of medical enterprise
4. Financial analysis and assessment of medical enterprise's financial condition
5. Pharmaco-economic analysis. Basic economic assessment methods of alternative medical interferences

IV. Theme methodology guidelines

Effectiveness of Health Care system can be determined by a set of effects:

– *Medical efficiency* is an extent of medical result achievement. In regard to a certain patient criteria is recovery or health improvement, functional recovery of organs or systems. In regard to Health Care criteria is the unit weight of recovered patients, chronic diseases decrease, morbidity rate decrease, so on. Medical efficiency determines a degree of tasks achievement in the disease diagnostic and treatment field, taking into account quality, adequacy and resultiveness criterion. Main indexes of medical efficiency are represented in *table 6*.

Table 6.

Main indexes of medical efficiency

1.1.	Efficiency of recourse use	$\frac{Rended\ medical\ services}{Volume\ of\ ecomomic\ recources}$
1.2.	Provision of outpatient care for the population	$\frac{General\ number\ of\ doctor's\ appointments}{Average\ population}$
1.3.	Doctors (nursing staff, paramedical staff) staffing of the medical establishment	$\frac{Number\ of\ the\ occupied\ position}{Number\ of\ doctors\ (\ldots.)\ positions}$
1.4.	Average load for 1 doctor's position in the polyclinic (per hour, day, year). Identically for home visits	$\frac{Number\ of\ sick\ calls}{Number\ of\ working\ days\ per\ year}$

1.5.	Function of the doctor's position (number of ill and healthy patients, which must be seen by a doctor per year, under the plan)	$(Number\ of\ scheduled\ doctor's\ working\ hours \times Patients\ number, that\ must\ be\ seen\ by\ a\ doctor\ per\ hour + Number\ of scheduled\ doctor's\ working\ hours\ for\ home\ vis \times Patients\ number\ for\ home\ visits) \times Number\ of\ working\ days\ per\ year^*$ * - *283 working days per year*
1.6.	Bed / Population Ratio	$\frac{Number\ of\ hospital\ bed}{Average\ population} \times 1000$
1.7.	Hospitalization Frequency Ratio	$\frac{Number\ of\ pation\ admisssion\ per\ year}{Average\ population} \times 1000$
1.8.	Bed turnover (Number of treated patients per year)	$\frac{Number\ of\ hospital\ returnee + Number\ of\ the\ dead}{Average\ bed\ number}$, or $\frac{Average\ number\ of\ bed\ use\ days\ per\ year}{Average\ continuance\ of\ patient's\ treatment}$
1.9.	Average bed occupation	$\frac{Number\ of\ patient's\ bed\ day}{Average\ bed\ number}$
1.10.	Average continuance of patient's treatment at bed	$\frac{Number\ of\ patient's\ bed\ day}{Number\ of\ hospital\ returnee + Number\ of\ the\ dead}$
1.11.	Use of the bed fund	$\frac{Number\ of\ patient's\ bed\ day\ ex\ post}{Number\ of\ bed\ day\ according\ to\ plan}$
1.12.	Upkeep cost of 1 bed per year	$\frac{Hospital's\ cost\ rate}{Average\ bed\ number}$
1.13.	Cost of 1 bed day	$\frac{Hospital's\ cost\ rate}{Number\ of\ patient's\ bed\ day\ ex\ post}$
1.14.	Cost of patient's upkeep	$Cost\ of\ 1\ bed\ day \times Average\ continuance\ of\ patient's\ treatment\ at\ bed$

– *Social efficiency* is an extent of social result achievement. In regard to a certain patient it is his rehabilitation, satisfaction in the medical services delivery. In regard to Health Care criteria is an increase in life expectancy, decrease of mortality and disability rate, societies' satisfaction in the medical services delivery.

– *Economical efficiency* is calculated as delta of economic losses due to illness before and after active medical measures carrying out.

Main evaluation categories are 1) examination of economic losses as a result of temporary disability that is caused by population morbidity and traumatism; 2) appraisement of total expenses for the prevention of social expenses of population joined with morbidity, disability, untimely death; 3) analysis of alternative medical treatment's effectiveness (pharmacoeconomic analysis); 4) financial analysis of medical establishment.

V. Exercises

1. Solve a problem.

Example of situation problem

At the previous period medical efficiency ratio was 0.58 points. It corresponds to the ratio of patients, who applied in an amount of 120 people, and 70 patients, planned to achieve therapeutic results. By means of unconventional therapies use in the reporting period medical efficiency ratio will be increased to 0.7 points.

Determine number of patients planned to achieve therapeutic results.

Solution:

1) In the previous period 0.58 = 70 120

2) During the reporting period = 0.7 X 120; X = 120 h 0,7 = 84 people.

Answer: During the reporting period there were 84 people, what is 14 people more than in the previous period.

Theme 13. Economic activity in healthcare field and stomatology

The studies' form is **lecture**, limited to 2 hours.

I. Actuality

Given economic and healthcare industry trends related to the worldwide financial markets, the nation's economy, and Ukrainian healthcare reform, access to external capital has become more important than ever for hospitals nationwide. For most hospitals, operating cash flow alone will not support the higher level of required capital spending. As pressure to reduce healthcare costs grows and deep cuts to Medicare and Medicaid loom, many hospitals and health systems are turning to alternative means of obtaining capital. For example, hospitals are using real estate investment trusts, private equity firms, and other alternative sources of funds to finance capital programs.

So it is very essential for students to acknowledge with alternative sources of capital in health care.

II. The purpose of the lecture is to familiarize students with financing models of capital management in health care.

III. Lecture plan

1. Credit and its types
2. Leasing and its types
3. Factoring
4. Forfainting
5. For-profit (non-profit) partnership
6. Private equity investment
7. Asset sales

IV. Theme methodology guidelines

Health care is a very capital-intensive business and access to debt financing keeps hospitals in business. Few medical enterprises today can generate enough cash flow from their operations and reserves to fund short- and long-term strategic investments in people, programs, facilities, and technology. Most hospitals must access external debt on a periodic basis to assure the provision of continued healthcare services in their communities. The ability to issue and support debt is not a "nice-to-have" capability; it is essential to the viability of nearly all Ukrainian hospitals and health systems.

Capital management is an accounting strategy that strives to maintain sufficient and equal levels of working capital, current assets, and current liabilities. This helps a company to meet its expense obligations while also maintaining sufficient cash flow and is primarily related to short term financial decisions.

Alternative sources of capital are (1) credit, (2) leasing, (3) factoring, (4) forfaiting, (5) for-profit (non-profit) partnership, (6) private equity investment, (7) debt restructuring, (8) asset sales.

Credit is a contractual agreement in which a borrower receives something of value now and agrees to repay the lender at some date in the future, generally with interest. There are many different forms of credit. When banks offer their clients car loans, mortgages, signature loans and lines of credit, those are all forms of credit. Essentially, the bank has credited money to the borrower, and the borrower must pay it back at a future date. However, loans are not the only form of credit. When suppliers give products or services to an individual but don't require payment until later, that is a form of credit. For example, if a restaurant receives a truckload of

food from a vendor but the vendor doesn't demand payment until a month later, the vendor is offering the restaurant a form of credit.

Leasing is a contract outlining the terms under which one party agrees to rent property owned by another party. It guarantees the lessee, the tenant, use of an asset and guarantees the lessor, the property owner or landlord, regular payments from the lessee for a specified number of months or years. Both the lessee and the lessor face consequences if they fail to uphold the terms of the contract.

Leases are classified into different types based on the variation in the elements of a lease. Very popularly heard leases are financial and operating lease. Apart from these, there are sale and lease back and direct lease, single investor lease and leveraged lease, and domestic and international lease.

Factoring is the business of purchasing and collecting accounts receivable or of advancing cash on the basis of accounts receivable.

A *factor* is a financial intermediary that purchases receivables from a company. A factor is essentially a funding source that agrees to pay the company the value of the invoice less a discount for commission and fees. The factor advances most of the invoiced amount to the company immediately and the balance upon receipt of funds from the invoiced party.

A factor allows a business to obtain immediate capital based on the future income attributed to a particular amount due on an account receivable or business invoice.

The terms and conditions set forth by a factor may vary depending on their own internal practices. Most commonly, factoring is performed through third party financial institutions, referred to as factors.

Factoring is not considered a loan, as neither party issues or acquires a debt as part of the transaction. The funds provided to the company in exchange for the accounts receivable is also not subject to any restrictions regarding use.

Procedure of factoring is presets at *Figure 12*.

Figure 12. Factoring

Example of factoring. Assume a factor has agreed to purchase an invoice of $1 million from Clothing Manufacturers Inc., representing outstanding receivables from Behemoth Co. The factor may discount the invoice by say 4%, and will advance $720,000 to Clothing Manufacturers Inc. The balance of $240,000 will be forwarded by the factor to Clothing Manufacturers Inc. upon receipt of the $1 million from Behemoth Co. The factor's fees and commissions from this factoring deal amount to $40,000.

Note that the factor is more concerned with the creditworthiness of the invoiced party – Behemoth Co. in the example above – rather than the company from which it has purchased the receivables, Clothing Manufacturers Inc. in this case. Although factoring is a relatively expensive form of financing, factors provide a valuable service to companies that operate in

industries where it takes a long time to convert receivables to cash, and to companies that are growing rapidly and need cash to take advantage of new business opportunities.

Forfaiting is a means of financing used by exporters that enables them to receive cash immediately by selling their medium-term receivables (the amount an importer owes the exporter) at a discount, and eliminate risk by making the sale without recourse, meaning the exporter has no liability regarding possible default by the importer on paying the receivables. The forfaiter is the individual or entity that purchases the receivables, so the importer is then obligated to pay the receivables amount to the forfaiter. A forfaiter is typically a bank or a financial firm that specializes in export financing.

Forfaiting procedure is presented at *Figure 13*.

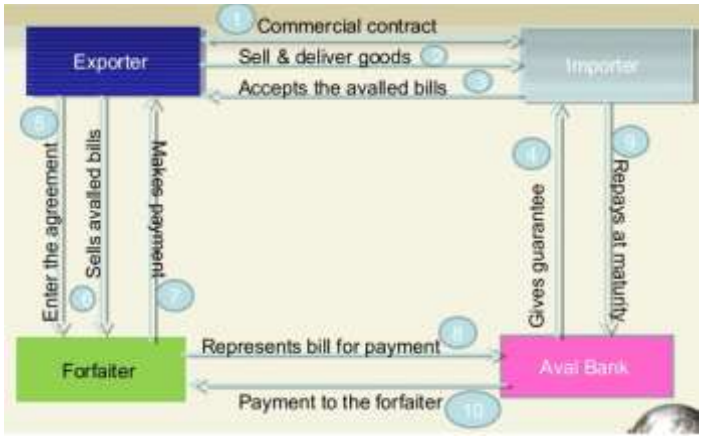

Figure 13. Forfaiting

A forfaiter's purchase of the receivables, the sum of which is typically guaranteed by the importer's bank, expedites payment and cash flow for the exporter, in addition to eliminating the credit risk involved with making a sale to an importer on credit.

Forfaiting is most commonly used in regard to large, international sales of commodities or capital goods where the sale price exceeds $100,000.

*For-profit/Non-profit partnerships***.** One way non-profit hospitals have been accessing capital is through partnerships or acquisitions by for-profit hospitals or health systems. For example, in the USA for-profit Plano, Texas-based LHP Hospital Group and non-profit St. Mary's Health System in Waterbury, Conn., are planning a joint venture, which would convert St. Mary's into a for-profit hospital. Relationships between for-profit and non-profit healthcare organizations can benefit both groups by providing the non-profit system with needed capital and providing the for-profit system with added resources.

*Private equity investment***.** Private equity firms' investment in health care is a new and growing trend that presents an attractive option to many financially unstable hospitals. Private equity firms can benefit through these acquisitions by using their capital to develop hospitals and health systems into profitable organizations. The idea is that the firms can deploy their equity investments in these operations, create critical mass by buying multiple facilities and create efficiencies that increase return on investment, putting them in a position to, in a 5-10-year period, go back out and remarket and sell these assets for a significant profit.

Debt restructuring. Medical establishments under significant financial strain, with little liquidity and high debt burden, may want to consider restructuring their existing debt portfolio. Reducing or eliminating tax-exempt bond debt and other securities can offer liquidity from immediate cash payouts and remove securities that may limit the organization’s capital position and its ability to undertake new investments.

When medical establishments are experiencing financial distress and are in danger of default on debt and insolvency, investors and lenders are often prepared (and may expect) to restructure their debt, including cashing out at a discount, reducing principal and interest,

stretching maturities and changing payment terms. In certain cases, these restructuring efforts may also include the compromise of some or the entire initial debt obligation.

For example, a 550-bed hospital used debt restructuring as one strategy to achieve a turnaround within two years of filing for bankruptcy protection with debts of $90+ million. The hospital negotiated a five-year deferral of debt from secured creditors, which was expected to save the hospital $12 million during that period.

Asset sales. Healthcare leaders should be asking hard questions about their existing portfolio of hospitals, businesses, services lines, and real estate to ensure that they have the right portfolio for changing competitive conditions. Divestiture of non-core assets may represent a significant capital-raising opportunity for many hospitals and health systems, and a means to focus the organization on core mission activities.

Hospital leaders should consider all strategic options for obtaining the capital required to meet continued needs of their communities. Beyond traditional and nontraditional options available through the capital markets and asset divestiture, as described earlier, hospitals can and should consider partnering with other organizations (or physicians) that can bring capital to the table to fund specific strategic initiatives or the organization's ongoing operations.

V. Exercises

1. Choose and analyze one of the financing sources above mentioned. Find an example of this source using in healthcare practice.
2. Define the role of capital management in health care. (Write a short paragraph).
3. Make a report on the following topics:
   1) Credit and its types
   2) Leasing and its types
   3) Factoring
   4) Forfainting
   5) For-profit/Non-profit partnerships
   6) Private equity investment
   7) Debt restructuring
   8) Asset sales

Theme 14. Medical organizations' activity, their effectiveness and the ways of its improvement

The studies' form is **seminar**, limited to 2 hours.

I. Actuality

Measuring, or profiling, physician efficiency and quality of care is central to several current initiatives in health care. Hospitals face a daunting challenge: providing safe, effective care in complex organizations strapped by heavy patient loads, limited staffing, and shrinking financial resources. Hospitals are improving their ability to provide safe, effective care, but experts agree that further gains must be achieved.

II. The purpose of the seminar is to acknowledge the students with opportunities for improving the efficiency of healthcare system.

Students must *know*:

1) content and economic nature of the effectiveness;
2) types of effectiveness in health care;
3) opportunities for improving the efficiency of medical organization's activity;

Students must *be able*:

4) to define the up-to-date and effective improvement way.

III. 2 hours are allocated for the **Individual Students' Work (ISW).**

Questions for self-control and discussing

1. Effectiveness in health care
2. Effectiveness of medical organization

3. Factors influencing the Health Economics efficiency as the economic branch
4. Ways of improvement of healthcare system's effectiveness
5. Ways of improvement of medical organization's activity effectiveness
6. Management and administration process of medical organization
7. Human resource management of medical organization
8. Motivation and stimulation of medical personnel
9. Main motivation methods
10. Organizational culture of medical organization
11. Automation of management in medical organization
12. ERP-systems in health care

IV. Theme methodology guidelines

Healthcare system of Ukraine needs significant and consistent institutional and structural changes, directed to the population's health increasing and their needs for adequate medical care satisfaction. It means the next procedures: (1) healthcare system efficiency increasing; (2) medical care quality improvement; (3) drugs' availability increasing; (4) social health insurance implementing; (5) monitoring and analysis of medical care availability and effectiveness.

Due to the deficiencies and poor quality of services, our country loses an impressive number of people annually. The decrease of this indicator can be achieved by applying some adequate human resources policies, in economic and social context. Most analysts of the health system believe that people are the key to the system, but there is no clearly formulated policy of human resources, leading ultimately to severe imbalances.

That supposes (1) medical personnel skill upgrading and self-improvement; (3) improvement of medical education; (3) implementing principles of team work, (4) creation of adequate and effective medical staff stimulation and motivation system, (5) formation of organizational culture in the hospital; and (6) automation of hospital management and healthcare system.

As far as we are facing a quite pronounced deficit of human resources in some areas it will be difficult to reach significant improvements in hospitals activity.

The depreciation of health services quality is forbidden in a developing country, which should ensure good health for all people. The role of the health system is to maintain the health of society at a high level to ensure proper functioning of all activities.

Ukraine chose the way to get a membership status of European Union, which requires Ukrainian compliance to some standards and international recommendations related to efficiency increase of health units and improve quality services provided to patients. Through developed programs, the European Union closely controls the patients' rights and the way the healthcare services are rendered to the citizens from community area. In this context one of the objectives of healthcare system improvement must be "the life quality increase by improving the quality and safety of medical care".

Such objectives are pursued further through programs and plans to reform the system, becoming strategic objectives for the Ministry of Health and the rest of the bodies involved in health insurance.

To achieve these objectives the way we approach the human resources management from system is essential. Hospitals – key units of the health system – should be prioritized in the process of solving the issues regarding personnel deficit.

The importance of human resources in the healthcare system. The performances of the health organizations depend on the way human resources are used to perform the activities necessary to achieve the established objectives. The importance of human resources can not be challenged in an area with unique characteristics such as the medical one. In addition to the specific features, this is underlined also by the high costs involved. Therefore, human resource management began to be viewed (especially in recent years, when quality has become a core value of the system) as a crucial element to the success of healthcare organizations and of the whole health care system.

Human resources management aims at ensuring a sufficient staff with certain skills and adequate training for an effective and efficient use of resources.

Unfortunately, from now on, Ukraine has a long way to achieve this goal. Regarding the human resource management, we have seen some weaknesses that must be corrected as soon as possible to achieve improved quality of service:

– high level of responsibilities avoidance, meaning that lack a strong culture built on the principles of professional ethics. Health professionals must be able to admit their mistakes and must be able to be responsible for the injuries caused to the patient. Also, the nature of business requires the doctor to maintain a permanent relation with the patient throughout the going on treatment;

– lack of a specific monitoring program to the professionals activity, meaning that it is difficult to carefully supervise the daily tasks realization;

– limited number of medical professionals;

– lack of a coherent program of maintaining the specialists in the country;

– imbalance between staffing needs and the number of graduates. Even if in the whole country, it is necessary to employ a large number of health professionals, graduates can hardly handle the desired positions;

– human resource planning is not realized on the real need for labor;

– inefficient use of available resources, which affects employee productivity and efficiency;

– insufficient training of medical staff. Although we have medical staff highly trained in certain specialties however there can be noticed the need of continuous improvement programs, especially that the medicine rate of growth is extremely fast. Computer technology can be barely used by the personnel;

– absence of motivational factors. In the entire health care system we noticed the lack of a clear worded motivational policy going to lead to the planned objectives. Because of financial conditions in some medical units, doctors have to face even the impossibility to implement all the knowledge acquired.

The exercise of human resource management activities (planning, organization, management, training and human resource development, staff motivation, performance evaluation) is essential for improving the hospital performance indicators. Although all functions are of major importance in the process of management, the staff motivation function requires special attention.

Demotivation of doctors and medium staff is directly reflected in the quality of care that reaches the consumer. Therefore, the quality of health services is generally evaluated subjectively by patients, and the most important aspect is the quality of care received in hospital.

So, the effects caused by the lack of motivation of practitioners and support staff can be easier anticipated.

The plans to reform the health system had as fundamental objectives the following ones: (1) increased efficiency in the provision of health services, (2) increasing accessibility to health services, improved quality of care and performance indicators of hospitals, (3) settlement of the services based on performance, etc. These goals may be achieved only using the methods and techniques for human resource management that bring more medical staff motivation. The researches in this area have shown that improvement of the health system performance can be achieved by promoting a "new and progressive" human resources management. In this context, encouraging teamwork can be an important motivator, especially since individual activities do no longer exist in medical area. Quality management specialists believe that "the effectiveness of a team has a huge impact on the success of any initiative to improve something".

It is important that the performance of health units should be evaluated based on the analysis of human resources indicators.

Very important are the inputs of human resource that must be made in accordance with the needs of the health system and the resources available at the time of analysis.

Current economic climate does not allow large inserts of personnel in the health sector.

Therefore, focus on how we can motivate the current resources is the key to improving health care quality. Hospital management has at least the moral responsibility to create a favorable work environment for such sensitive activities to be carried on.

Thus, the coherent fulfillment of the motivational function of the actual human resources will become a mandatory requirement for the system strengthening so that it could meet f the population's demands.

V. Exercises

1. Analyze main problems of Ukrainian health care. What are the main problems and opportunities of its development? What should you advice for its efficiency increasing?
2. Analyze main tendencies of your country health care development. What are the treats and opportunities of its development? What should you advice for its efficiency increasing?
3. Analyze the main motivation methods. Which are the most effective, in your opinion? Argue your answer.

Theme 15. Procedures of case-study as the form of practical skills mastering

The studies' form is **practical classes**, limited to 2 hours.

I. Actuality

A case study is an account of an activity, event or problem that contains a real or hypothetical situation and includes the complexities students would encounter in the workplace. Case studies are used to help students see how the complexities of real life influence decisions.

Analyzing a case study requires students to practice applying their knowledge and thinking skills to a real situation. To learn from a case study analysis students will be analyzing, applying knowledge, reasoning and drawing conclusions.

II. The purposes of the practical classes

Students must *be able*:

1) to solve different case-studies in healthcare field.

III. 1 hour is allocated for the **Individual Students' Work (ISW).**

Questions for self-control and discussing

1. Analyze suggested cases and solve them

IV. Exercises

Case 1

At the previous period medical efficiency ratio was 0.58 points. It corresponds to the ratio of patients, who applied in an amount of 120 people, and 70 patients, planned to achieve therapeutic results. By means of unconventional therapies use in the reporting period medical efficiency ratio will be increased to 0.7 points.

Determine number of patients planned to achieve therapeutic results.

Case 2

Calculate total need for medical assistance for the population in equivalent units of standard administrative district, if:

- Number of male population is 30 thousand people;
- Number of female population is 40 thousand people;
- Need coefficient of citizens with health care is 5.3.

Case 3

Calculate the planned cost of the dispensary services per 1 person from the group Dz-3, if there were 3000 people in the group in the base period it has decreased by 5.0% and in the planned period. Cost of services per 1 person for this group was 325 UAH in the base period.

Case 4

Net insurance, i.e. the price of insurance compensation by the insurance company, is determined per 1 company in the amount of 700 UAH and load is 200 UAH.

How will change the gross rate (tariff rate of insurance as the total value of the insurance policy), if the load increases by 20.0%?

Case 5

Calculate the planned function of medical office, if:

1. Time costs on the primary physician activity are 15 min. and on the secondary activity is 10 min.
2. The unit weight of primary visits is 36.0%
3. Mode of operation of physician is 1660 hours.

Case 6

1. The number of staff of medical enterprise is:
   - Physicians - 1 person;
   - Nurses - 1 person.
2. Mode of operation of medical enterprise is 1400 hours per year.
3. Middle-hour rate:
   - For physician is 8 UAH;
   - For nurse is 4 UAH.

How will change the wage fund of the medical enterprise, if the physician's middle-hour rate is decreased by 2 UAH and nurses one is increased by 2 UAH?

Case 7

The total number of polyclinic visits was 26190 visits per year in the base period, planned function of 1 physician is 8730 visit, including mode of his work in the amount of 1455 hours per year and average load in the amount of 6 visits per hour.

How will change the number of rates of physicians in the planned period, if the estimated rate of physician's load increases by 1 visit per 1 hour in the time of constant mode of operation?

Case 8

Insurance fee of the enterprise per 1 year for the medical insurance per 1 employee is 500 UAH. Number of employees at the enterprise is 1000 people.

How will change the amount of the insurance fee of the company, as a percentage, if the insurance rate per worker increases by 20.0%?

Case 9

The estimated value of the anticipated medical insurance per 1 employee (i.e. net rate) is determined by the insurance company in the amount of 700 UAH, including cost of service in the polyclinic in the amount of 200 UAH and in the stationary in the amount of 500 UAH.

How much will be net rate, if the probability of hospitalization is forecasted to be at 20.0% level?

Questions for Individual Student's Work

1. Reformation tendencies of Ukrainian healthcare system
2. World healthcare system
3. Healthcare system of the industrialized countries (Choose the country/their group by your own)
4. Healthcare system of developing countries (Choose the country/their group by your own)
5. Healthcare system of undeveloped countries (Choose the country/their group by your own)
6. Planning in the healthcare field
7. Types and methods of planning
8. Strategic planning process
9. SWOT analysis
10. PEST analysis
11. Personnel planning in health care
12. Planning of medical care volume
13. Definition and essence of marketing activity.
14. Principles, functions and purpose of marketing activity.
15. Basic concepts of marketing (need, want, desire, demand, value, satisfaction).
16. Model of marketing activity.
17. Marketing mix.
18. Marketing research process.
19. Methods of marketing research.
20. Segmentation.
21. Marketing environment.
22. Types of marketing depending on demand.
23. Marketing strategies.
24. Features of marketing activity in health care.
25. Content of price for medical services and its functions
26. Price classification
27. Factors affecting price
28. Operative principles of price regulation
29. Pricing policy
30. Structure of price for medical service
31. Classification of expenses
32. Pricing methods
33. Price strategies
34. Price elasticity of demand
35. Economic essence of finances and its main points
36. Sources of finance formation in the health care system
37. Main health system models and its features
38. Economic essence of budget
39. Features of budget formation process
40. Budget transfers: equalization grants, subventions, cash withdrawals, subsidy, donations
41. Calculation of the cost savings' possibility in the process of outpatient and polyclinic care providing to the population
42. Financial reliability of an insurer
43. Procedures of insurance rate and premium calculation
44. Insurance reserve
45. Strategic business planning in health care
46. Structure of business plan
47. Marketing plan
48. Financial plan

49. Organizational plan
50. Essence of economic analysis in health care
51. Medical, social and economic effectiveness of medical enterprise
52. Factors influencing efficiency of medical enterprise
53. Financial analysis and assessment of medical enterprise's financial condition
54. Pharmaco-economic analysis. Basic economic assessment methods of alternative medical interferences
55. Effectiveness in health care
56. Effectiveness of medical organization
57. Factors influencing the Health Economics efficiency as the economic branch
58. Ways of improvement of healthcare system's effectiveness
59. Ways of improvement of medical organization's activity effectiveness
60. Management and administration process of medical organization
61. Human resource management of medical organization
62. Motivation and stimulation of medical personnel
63. Main motivation methods
64. Organizational culture of medical organization
65. Automation of management in medical organization
66. ERP-systems in health care
67. Analyze suggested cases and solve them
68. Labour market in health care and its opportunities appraisement
69. Role of family doctor in the modern market conditions
70. Monopoly in healthcare system: its advantages and disadvantages

Questions for test control

Content issue 1. Theoretical and organizational basis of health economics

1. Health economics: its subject, goal, main tasks and methods
2. Features and mechanism of economic laws in the healthcare system
3. Essence, functions and procedures of planning activity in the healthcare system
4. Types of planning and their comparative characteristics
5. Planning of medical care volume and staff
6. Development strategy in the healthcare system

Content issue 2. Healthcare services market and its research methods

1. Objective laws of the healthcare market formation and functioning and its features
2. Organizational, economic and law methods of the market regulation in the health care
3. Essence, main principles and functions of medical services marketing
4. Stages of complex market researches in the healthcare market
5. Components of the marketing activity of the medical organization
6. Calculation of the medical services value in the market conditions
7. Price regulation mechanism
8. Types of prices in health care
9. Price formation procedure of the medical services and its stages
10. Price formation policy and its driving forces
11. Basic models of pricing

Content issue 3. Organization and content of financial management in the healthcare system and stomatology

1. Healthcare system's funding in the modern conditions
2. Budget and gears of its formation in healthcare system
3. Basic models of healthcare systems
4. Essence of financial analysis at the medical and stomatological organizations
5. Financial state of the medical organization and its appraisement gears
6. Effectiveness appraisement of financial business activity in health care

Content issue 4. Health insurance as the mechanism of the healthcare system funding

1. Content, types and features of health insurance
2. Economic and law basis of health insurance
3. Procedures of insurance tariff calculation
4. Characteristics of insurance medicine
5. Types of medical insurance and their comparative characteristic

Content issue 5. Medical organization's efficiency analysis and appraisement

1. Essence of entrepreneurship and business activity, their features in healthcare system
2. Organizational legal forms of business activity: their content, characteristics and types
3. Financial models of capital management (credit, leasing, factoring, etc.)
4. Essence and practical significance of an economic analysis in the healthcare system
5. Financial analysis and assessment of financial condition of medical enterprise
6. Effectiveness analysis of medical enterprise (medical, social and economic effectiveness analysis)
7. Pharmaco-economic analysis

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