

TABLE OF CONTENTS

OPTIMIZATION OF ORGANIZATIONS OF THE RENDERING TERTIARY HEALTH CARE SYSTEM LEVEL – AN IMPORTANT STRATEGIC PROBLEM OF THE HEALTH REFORM IN THE KYRGYZ REPUBLIC

E.T. Bokchubaev, B.A. Abilov, M.K. Kulzhanov, S.O. Orozaliev, N.S. Smankulova

PRIORITIES OF HUMAN RESOURCES POLICY IN HEALTHCARE

M.A. Kamaliev

ON TRAINING OF SPECIALISTS OF PRIMARY MEDICAL CARE SYSTEM

A.K. Kaptagaeva, A.N. Smailova

DEVELOPMENT OF HUMAN RESOURCES SYSTEM FOR PROFESSIONAL COMPETENC

O.T. Zhuzjanov, S.Z. Kairbekova, S.M. Abdigulov, M.S. Turdunov

DEFINITION AND IMPORTANCE OF SOME RISK FACTORS FOR OSTEOPOROSIS

A.A. Turekulova, E.B. Tazhiev, U.A. Abdurazakov

ASSESSMENT OF MEDICAL WORKERS' COMPETENCE IN ISSUES OF PREVENTION

B.S. Turdalieva

THE ROLE OF DISTANCE LEARNING TECHNOLOGIES IN THE SYSTEM OF CONTINUING MEDICAL EDUCATION.

S.Z. Kairbekova

RELIGIOUS ACTIVITY AND AVERAGE LIFE SPAN OF OLDER POPULATION

D. Borohov, A.Borohov

METHODOLOGICAL BASICS FOR STRENGTHENING OF PREVENTIVE PROGRAMS IN KAZAKHSTAN.

G.J. Tokmurzieva

SOME ASPECTS OF ADOLESCENTS' PHYSICAL ACTIVITY IN ALMATY CITY

M.K.Kulzhanov, T.F. Balabayev, G.A. Mergenova, N.Sh. Khasenov

INDEPENDENT MEDICAL EXPERTISE IS THE "KEY" TO IMPROVEMENT OF THE MEDICAL SERVICES QUALITY.

I.V. Ibragimova, B. Y. Sarymsakova.

PROBLEM OF OCCUPATIONAL TRAUMATISM IN KAZAKHSTAN

Arystanova G.T., Kenzhebaev S.K., Tokmoldinov F.S., Khasenov K.M.

EXPERIENCE OF CLINICAL PRACTICE GUIDELINE IMPLEMENTATION IN PHC FACILITIES OF KARAGANDA CITY.

Nugmanova A.E., Nugmanova D.S., Dzhusipov A.K., Ermekbaev K.K., Ermekbaeva B.A., Kozhabekova S.N., Shaidarova S.Zh., Makazhanova L.Kh., Omarkulov B.K.

**MONITORING AND EVALUATION OF CLINICAL PRACTICE GUIDELINE
IMPLEMENTATION**

**Nugmanova A.E., Gita Pillai, Nugmanova D.S., Ermekbaev K.K., Ermekbaeva B.A.,
Kozhabekova S.N., Shaidarova S.Zh., Khe N.S., Alikhnova K.,
Makazhanova L.Kh., Omarkulov B.K.**

**CHRONIC NONCOMMUNICABLE DISEASES: FROM TREATMENT TO
PREVENTION AND HEALTH MANAGEMENT**

B.S. Turdalieva

**IMPACT OF SOME RISK FACTORS ON FORMATION OF HEALTH FOR SCHOOL
CHILDREN**

G.K. Ospanova, D.R. Buzunova, G.B.El gondina, G.S. Kakimova, A.K. Karazhanova

OPTIMIZATION OF ORGANIZATIONS OF THE RENDERING TERTIARY HEALTH CARE SYSTEM LEVEL – AN IMPORTANT STRATEGIC PROBLEM OF THE HEALTH REFORM IN THE KYRGYZ REPUBLIC

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Introduction.

At present the tertiary level System in granting the medical services to population has gained high urgency as a result of successful introduction of the new high-tech methods of the diagnostics, treatments and rehabilitation action in clinical practical. So, innovation changes to system computer and information technology have allowed creating the high - informative diagnostic methods and improving technology of the execution many clinic-diagnostic actions that happened for the last decennial event. Gradually the category of the stale methods got X-Ray, endoscopes standard and ultrasonic methods of the study.

The List of the research diagnostic renews the new high-tech research methods: magnetic resonance, computer, spiral, positron emission topographies, computer angiographies, and others (1).

It is actively introduced molecular-biological and genetic laboratory methods of the study in the physician practice. The new appearance diagnostic method simultaneously goes with integration already existing method.

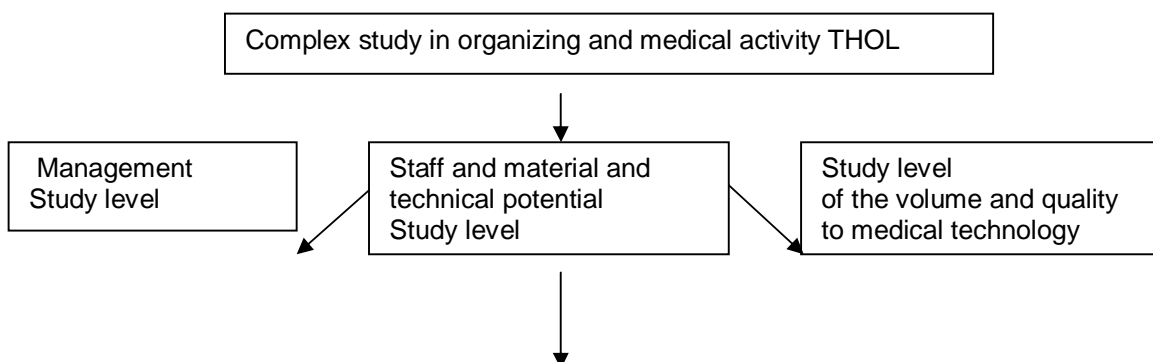
Since each year extra corporal methods treatments and gravitation surgery with use new disposable product medical technology are improved as well as the new types to plastic reconstruction surgery (2).

Active introduction and realization of the above new diagnostics methods and treatments certainly requires availability to high qualification and professional knowledge's level of the medical personnel, as well as improvement organizing-structured of the health organization. It is importance to have corresponding research base in organization that promotes a development system of a continued quality system and efficiency of the health care services patient as a whole.

The Purpose of a complex study tertiary health organization level (THOL), is a summarizing data on volume and quality used medical technology, analysis introduction high-tech type level, as well as management, material support and THOL personnel capacity.

Material and methods.

The Study was conducted with use approved standard and criterion within the framework of Program accreditation of health's organization of the Kyrgyz Republic. The Scheme of the study was submitted for figure 1.



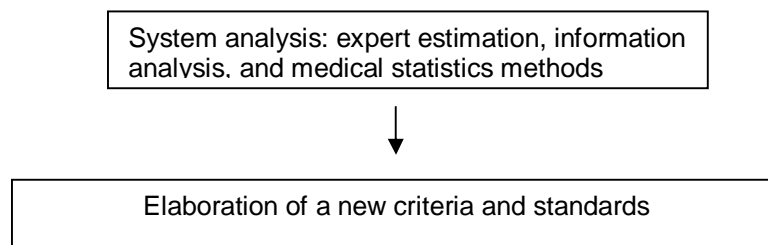


Figure 1. Scheme of the THOL complex study.

The Object of the study is a THOL national level (the table 1).

Table 1

List republic tertiary health organization level, passed accredited expertise

№№	List THOL	Bed amount
1.	National surgical center (NSC)	302
2.	Kyrgyz scientific center hematology (KSCH)	96
3.	National hospital (NG)	1225
4.	National center of cardiology and therapy (NCCand T)	280
5.	National center of pediatrics and baby surgery (NCP and BS)	479
6.	Total:	2382

Expert and information analysis were subjected to 960 medical cards stationary sick (f 003/Y), 346 medical outpatient cards (f 025/y), 70 account of the acceptance sick of account magazines and refusal of hospitalizations. Besides, estimation were subjected to 65 crew scheduling, 92 package plans and short-term and structured subdivision reports, including financial and personnel department reports, 70 consolidated bulletin of the account of the motion sick and work bed fund, 43 registrations journals of the instrumental and laboratory research, 45 record books of the sanitary condition of the institution.

The Estimation result was conducted with using the relative factors and average values. Intercoupling correlation availability of the compared factors was defined by calculations of the correlations factor by method Pirsona.

Study results:

I. As a result an accredited expert operation was established that following defects were revealed in management activity of THOL and discrepancies to requirements standard to accreditations:

- It is not determined type and type organization in accordance with Law of the Kyrgyz Republic "About health organization in the Kyrgyz Republic" in a charter.
- The pulpit KGMA *Kyrgyz State Medical academy), KRSU *Kyrgyz Slavonic University)and MUK (Kyrgyz International University) were accomplished, which do not pay or partly pay the lease and unlawfully use the premises and utilities; there are absent the agreements with above high educational institutions on undertaking scholastic occupation in breach of the Charter.

- There is not clearly designed account policy and doesn't up-to-the-mark financial internal audit for target use on funds on lines of the consolidated budget.
- A Package acting normative legal acts not full (the laws, health guard and promotion issues in a state and national programs, orders, instructions and etc.).
- A Mechanism to feedback with patient requires to optimization, since in greater degree it formal and little efficient; in structured subdivisions there have only a book of the complaints and offers, sometimes have a confidence telephones.

Conduct paperwork does not correspond to the installed order: (the absence of the nomenclature file in structured subdivisions, absence in combined nomenclature of the structured subdivisions sections of the, wrong conduct journal in-going and outgoing documentation, breaches in registration of the personal dossier of the medical personnel and etc).

1. A taken management decisions weren't validity in 78,9% events and sometimes impossibility to guess their final effect, which brings about development such consequence and reveal itself immediately and often it doesn't yield to the operative objective estimation on ground places. But therefore the organization appear to difficulties, but sometimes it was impossible to correct wrong consequence decisions immediately

2. Within the framework of autonomy organization all more reveals itself the new trends in independence of the leaders in decision integer row of the new problems in 56,5% events :

- Determination strategic aim and management problems;
- Gradual improvement of the rational use resource methods;
- Optimization of the management decisions procedure;
- Searching for the most efficient management styles and improvements to motivations of the personnel

At the same time an activity of chief of a clinical branches were revealed defects in 76,8% events such as planning and forecasting. In particular case, it is absent a clear scheduled issues. In complex year plan there are not taken into account necessary actions, first of all, on improvement quality and safety health care service. A part of action plan of the structured subdivisions have duplication a functional duty of a personnel, there is weakly conducted the execution monitoring scheduled action, and there are absent the documents, certifying fact of the performance of the significant number scheduled action (the order, dictations, minute of the meeting with decision). In 46, 7% events there is weakly conducted design review the annual package plan.

Internal audit activity in structured subdivisions is conducted in 18,2% structured subdivisions only, results audit doesn't always clearly documented and discuss on production meeting and conference. In 82,9% subdivisions there is absent profound and deep analysis to activity organization and structured subdivisions.

II. Organized complex official analysis and professional-qualified structures of the personnel in specified organization is characterized low staff providers of the clinical branches in 36,8% cases , but average medical personnel - in 42,7%. Their correlation in all clinical branches formed 1: 2,6 at the average that points that physician has responsibility for many actions, not requiring to specific qualifications.

The Main reason of full providing medical personnel is incorrect planning of necessity, distribution and using the personnel in organization. It is importance that a low social-economic motivation is existed at present that promotes the personnel turnover from institutions.

The staff of physician and nurse is characterized by greater share of the personnel without qualified to categories (table 2.)

Table 2

Specific gravity of the medical personnel, having qualified categories

№№	Health Organizations	physician	nurse
1.	National surgical center (NSC)	46,4%	54,7%
2.	Kyrgyz scientific center hematology (KSCH)	64,5%	45,0%
3.	National hospital (NG)	47,8%	48,2%
4.	National center of cardiology and therapy (NCCand T)	50,6%	43,2%
5.	National center of pediatrics and baby surgery (NCP and BS)	39,8%	48,2%
6.	Total:	51,4±2,4%	54,5±3,9%

The Note: The rates reflected in earl "Total" are an average value of the qualified categories rates, installed in clinical branches accredited organization.

It is evident from table; it should be conduct the wide scale action on increasing an employee-qualified categories in organization tertiary level in the near future.

III. The Material and technical base (MTB) of health organization in modern condition is defined by technical condition of the buildings and premises, being equipped and efficiency of the using product medical technology, economic and auxiliary fund. The Special Resources section of hospital is a bed fund and efficiency of its use (2).

In spite of improvement of the arrival product medical technology and hospital equipment in recent years in health organization, 23,5% structured subdivisions was installed defect of the most necessary medical equipment. Simultaneously 37,8% subdivisions available medical equipment was used not rationally, without load or was remained because of lack specialist, or spare parts

So, for instance – ray, electroencephalography, miography, torascopy, physiotherapy equipment, and anesthesia -respiratory equipment are outdated in National hospital. There are worn-out electrocardiography devices, cardio monitor, and day allowance monitors in NCC and T.

The total expert estimations of the condition of the premises and cabinet under investigation health organization are presented on figure 2. It is necessary to note that occupied area of bed in chamber does not correspond to Sanitarian rules (SANPIN) of the Kyrgyz Republic in all accredited health organization (the section 3, p.p. 3.1-3.9). as well as insufficiently providing soft inventory and hard stock. It is noted about life-expired available hard stock, beds, bedside-table, and insufficient amount shower-baths rooms. The breaches of the normative requirements were revealed, concerning work influx-and-extract ventilations, observance radiation safety.

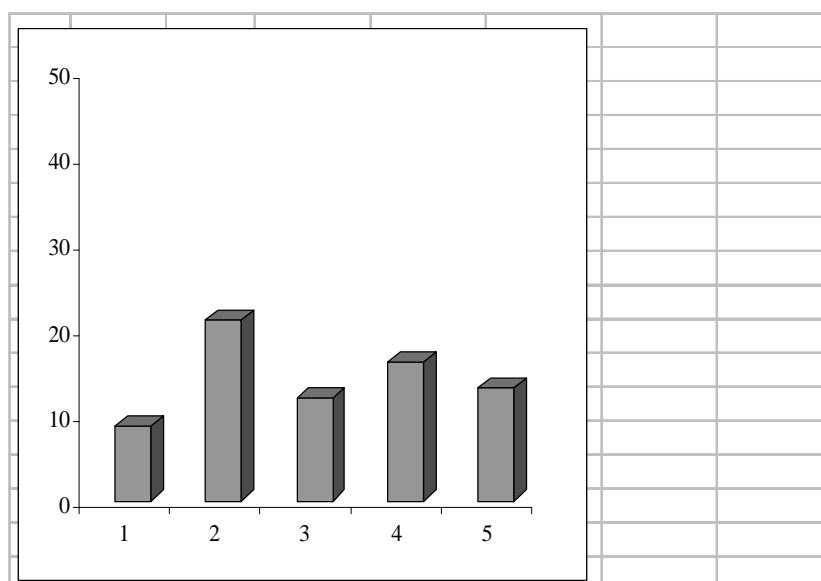


Diagram 2. Condition of the material and technical base health tertiary organization level

Note:

1	Amount of the subdivisions, residing in adapted building.
2	The Amount of the premises and buildings, requiring repair.
3	The Share of the premises of the service with lack ensuring the communication system
4	Share of the premises with lack of the necessary stock.
5	Amount of the subdivisions with high worn of medical technology

IV. A system approach was used in THOL data For study of quality medical health care which it implies that main factor is a labor of nurse, its formalized units and applicable methods, as well as presence to high technology in process of the rendering medical services to patients (3). For estimation quality rendering medical health care we were organized expert operation to activity of all clinical branches and auxiliary subdivisions. As a result of studies we were revealed technologies defect of the rendering specialized medical health care, which it were split into organizing, diagnostic and medical defects, both when rendering emergency, and planned health care, under its realization in process of the preventive maintenance, diagnostic's, treatments, rehabilitations i.e. on all stage medical health care services. In the following table the data of defect of the granting medical health services from the gross amount subjected to expert operation of the medical cards are presented in percent in THOL

Table 3

Share distribution defect to technologies of the system of the granting the medical services

N ^o N ^o	Health organization	Amount med. cards	Defects of the registration (%)	Diagnostic defects (%)	Medical defects

					(%)
1.	National surgical center (NSC)	678	10,0	14,2	3,3
2.	Kyrgyz scientific center hematology (KSCH)	238	1,6	6,6	5,0
3.	National hospital (NG)	679	7,4	15,3	6,6
4.	National center of cardiology and therapy (NCCand T)	550	8,0	3,3	5,3
5.	National center of pediatrics and baby surgery (NCP and BS)	470	10,0	6,7	7,0
6.	Republic centre of reproductive health	245	6,6	4,4	4,4

The Analysis defect in technologies rendering medical health care in THOL has allowed installing that most specific gravity defect is conditioned by breaches organizing and medical-diagnostic processes at moment primary health care service and rendering planned health care (the table 4).

Table 4

Structure defect rendering medical health care (%)

THOL	Organizing defects	Medical-diagnostic defects			Total
		At clinic service	When rendering emergency health care	When rendering planned health care	
Portion	50,7	15,7	13,7	19,9	100,0

The Analysis of the defect reasons in rendering therapeutic health care allows classifying them on "uncontrolled" - independent from action of the medical personnel or connected with insufficient financing and low provision level of consumables and equipment, with heavy or malignant disease. So named "operated" defects have formed 34,7% from all revealed defect. Correlation of the main reasons defect, influencing upon fullness and timeliness medical - a diagnostic process are presented in table 5.

Table 5

Correlation of the main reasons defect and their influence upon fullness and timeliness medical – a diagnostic processes on tertiary level

Reasons defect	%	r*
Nonperformance of the functional duties and a low qualified category of physicians	12,3	+0,2±0,03
Malignant current disease	29,7	+0,4±0,02
Organizing defect	58,0	+0,6±0,01
Total:	100,0	

Note: r* - a correlations factor.

It is seen from presented tables, the most denominated influence correlations factor upon quality medical-diagnostic processes and it is noted in events of the wrong organization of the process of the medical service and under malignant current of the diseases.

Thereby, a THOL for development of the system of unceasing quality rendering medical health is necessary to perform the following conditions:

1. In accordance with Kyrgyz Republic Law "about health organization in Kyrgyz Republic" article 18 and within the framework of implementation of the National health program "Manas Taalimi" are necessary to revise the Charters (the regulations) THOL with concrete determination of the type and state, as well as purposes and tasks health organization, particularly tertiary level.

2. This THOL level should be enlarge the volume and raise the quality of the rendering medical health care to population by way of the rational use the high-tech equipment, leading scientific achievements with attraction high qualified medical personnel

It is necessary to increase the possibility health tertiary organization level in undertaking consulting-methodical health care to region, in organizations of the exit crews for rendering practical health care to population and medical staff in remote region of the republic. It would be continued the development and introducing the criterion and standard to accreditations for organization tertiary level.

Proposed criteria of the referring health organization to tertiary level are below showed (the table 6).

Table 6

Criteria, characterizing tertiary health organization level

No	Criterion
1.	Rendering high specialized type medical health care in accordance with profile of the health organizations
2.	Use high-tech diagnostic, medical and rehabilitation methods in process of the service to the population, in accordance with confirmed pepper, which cost exceeds 100 minimum salaries
3.	Presence high developed and modern information technology systems, providing qualitative and efficient registration, account and analysis result granting the medical services to patients
4.	Presence of the material and technical base (building, premises, bed fund, resource equipping), allowing execution qualitative and efficient diagnostic, medical-sanitary and rehabilitation action (in accordance with table of the equipping for health organization tertiary level)
5.	High professionalism and level to qualifications medical and scientific staff corresponding to modern international standard
6.	Presence of the scientific base for analysis, development and introduction new medical technology and modern research achievements
7.	Systematic publishing and publication methodical manual, recommendation, allowance instruction on actual issues in the medical science and practice field, in accordance with

	new methods of the preventive maintenance, diagnostic's, treatments and rehabilitation:
8.	Presence of the strategic program of the development and financial support of staff and material- technical potential for rendering methodical and consulting health care to health organization of primary and secondary level
9.	Participation in development and implementation national and state programs in the health sector, other normative and legal document on medical and social servicing of the population
10.	Possibility of the granting patient service high-class services
11.	Presence of the system of internal management and audit, based on international standard ISO 9000: 2001

1. The section "Planning and analysis to activity health organization " in curriculums course preparation and retraining courses of the personnel for management in all levels in view of strategic and priority problems is an important enabling and orientation on real attainable final result in process of the granting the medical services.
2. It is necessary to develop and introduce in practice an activity of strategic planning management, distribution and using trained resource with provision for level health organization, as well as new methods and mechanisms on improvement of the qualitative composition and qualified features medical staff
3. It is necessary to revise and define the list high-tech (high-priced) type medical health care with provision for modern level and developments trained and material and technical potential health organization.
4. It is necessary to raise efficiency of the technical maintenance Fund for rational and steady of working the medical technology and product for the medical purposes in health organization

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PRIORITIES OF HUMAN RESOURCES POLICY IN HEALTHCARE

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Human resources of healthcare underwent definite quantitative and qualitative changes. Following main directions of state policy of healthcare system's optimization, which main

content was cutback of system and capacity of medical-preventive organizations, thus human resources policy was directed to shortening of number of job positions.

Towards the end of 20th – early 21st century in the context of balancing and steady social-economic development, resource provision was to be improved. This has been reflected in the growth of physician numbers since 2001. In 2004 there were 54758 physicians of all specialties (without dentists), that amounts 36,3 physicians for 10000 of population.

Current time, there are disproportionate number of physicians providing different administrative-territorial units. Provision level by physicians is significantly less than average republican index in most of the oblasts of Kazakhstan. Disproportionate distribution of physicians in population at various administrative territories, between city and country, and between rural administrative units, form unequal access and quality of medical care, therefore – inequality in realization of constitutional rights of citizens for the health care.

Another real problem of personnel policy is norm-setting of healthcare workers, including norms of workload, time, and number of workers. Nowadays profession of physician is become mass produced as never before. Although in 1990's number of students in Kazakhstan were decreased on a yearly basis, since then beginning of current century, there is a traced stable tendency of growth, both in absolute and relative indices. Furthermore, there is a tendency to dehumanization of medical profession, which is conditioned by its social-legislative unprotectability.

As top-priority step of human resources policy, there is an attempt to find optimal quantity of medical workers including their redistribution, considering stages and profiles of medical care, with the purpose of strengthen primary medical care.

The next step should be the formation of state order for training of healthcare human resources (number of grants). Ministry of health must define and specify common and additional need in specialists differentiated by specialty groups (nomenclature), and requirements for these specialists. State order for enrolment of students must take into account the capacity of academies (required labor, material, and financial resources, research-pedagogical potential), and also equilibrium with other subsystems of education.

Currently in formation of normative base for healthcare, there is a need for evidence-based staff norm and typical staff of healthcare organizations, normative acts on rights of local healthcare organizations and heads of health organizations on determining of organization's structure, accounts and allocation of job positions' number, and also to spread rights and responsibility of heads of healthcare organs and organizations. Reform of labor payment for healthcare workers must be developed in following directions: increasing of guaranteed minimum of salary to level of dynamic accordance to salary sizes in industrial and non-industrial platforms; provision of customers' demand and public prestige of medical profession; widening of scales and deepening of differentiation, depending on labor volumes and quality.

Also the system of quality management responding to international standards ISO 9000-2000 and improvement of system of united national testing should promote quality improvement of medical education.

ON TRAINING OF SPECIALISTS OF PRIMARY MEDICAL CARE SYSTEM

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More than 25 years ago Almaty Declaration put primary medical care (PMC) on the top of «agenda» of healthcare policy. Since then importance of PMC was also confirmed in practice

– separate countries undertook important steps on its strengthening, others grounded their own policy exclusively on principles of Declaration. Population health is one of the most important priorities of Kazakhstan social policy. In the Message of President for 2005 there is a mention of real transfer of focal point to primary medical service and accent displacement from in-patient to out-patient care as top-priority tasks.

Status of the situation is characterized by insufficient attention to development and strengthening of PMC, financing on residual principle and underestimation of its real capabilities, technological backwardness. Material-technical base of rural medical-preventive organizations continues to remain in unsatisfied status, and what is more important, PMC facilities are not staffed by qualified human resources. Analysis shows that number of factual visits of PMC organizations in some regions exceed norm indices more than 1,5 times.

Currently, the human resources' provision of PMC organizations by general practitioners (GP) is accomplished both via training in internship in medical academies, and retraining of general practitioners at the departments of advanced training of physicians in medical academies, and in Almaty state institute of physicians' advanced training.

In accordance with plan of actions on realization of National program of healthcare reforms and development for 2005-2010, there are foreseen funds in republican budget of 2005 for qualification improvement and retraining of GPs. Besides, according to budget program 014 «Qualification improvement and retraining of human resources» there is yearly allocated funds for training of GPs. Thus, today it became obvious that training of GPs requires an active intervention with aim of increasing training modalities.

Provision of personnel for PMCs, especially in distant and rural regions, relates to existing deficit of medical workers that are not filled up by graduates—specialists of medical educational organizations. Lack of mechanisms of promoting the human resources (material incentives, favorable social conditions, provision of benefits) lead to an average of only 50% of graduates of medical academies placed through assignment. Thus, to solve the human resources problem in PMC, it's required to make some managerial decisions directed to creation of system, which will provide access to good quality medical care for population.

DEVELOPMENT OF HUMAN RESOURCES SYSTEM FOR PROFESSIONAL COMPETENCE

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Conception of intellectual capital which consist human, social and organizational capitals provides base for our approach to development of efficiency criteria in human resources. Each component of intellectual capital is measured and provides possible influences on quality of medical care.

Human capital is the key element of market cost of a company, and therefore it's cost must be included into the account as index for investors or for those people, who considers them as possibility of fusion or enterprise purchasing, including nonmaterial actives.

Many scientists define the level of human capital as ratio of basic level of requirements of qualification characteristics or competency level of medical personnel. If we take into account the sample level of human capital, i.e. competencies of medical organization- in this case all physicians and middle medical personnel, then we can assign a score of 100 for these high professional categories..

Conception of social capital is often mixed up with conceptions of social responsibility, social protection, etc. Social capital is knowledge, which is transmitted and developed through relationships between workers, partners, suppliers and customers. It's created owing to knowledge exchange, and it requires an existing of general organizational environment, and which could execute similar exchange continuously and freely.

The feature of healthcare system is that medical service always requires work in team. So, development of social capital is emphasized. And its measurement presents significant difficulties. Measurable criteria and indices are extremely varied and commensurable in a complicated manner. At the same time, they should be defined. Social capital is the questions related with construction and development of organizations, which strength the processes of development, mastering and distribution of knowledge.

Organizational or structural capital forms the knowledge, that organization has but not its separate staff members. It can be described as introduced knowledge or institutionalized knowledge, which can be saved by means of information technologies in accessible and easily expansible databases. Social capital may include definite information, which is recorded in databases, instructions and standards on executing the procedures, or unwritten knowledge, that can be mastered, exchanged or, as much as possible, codified.

Organizational capital is created by people (human capital), but at that time it is free from social capital. It belongs to medical organization and can be developed by means of knowledge management system.

DEFINITION AND IMPORTANCE OF SOME RISK FACTORS FOR OSTEOPOROSIS

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Osteoporosis is a complicated disease which is affected by several factors. Epidemiological studies showed no race, nationality and country is immune from this disease. Studies further show that regional, age-specific, ethnic features of bone mass peak being eventually lost yielding to osteoporosis.

The goal of this research is detection of most important risk factors of development of osteoporosis for population of Almaty city. The research study used sociological interview, and the study of mineral density of bone tissue by ultrasound densitometer. The study subjects were 168 people whose age were between 30-59..

Spearman&Kendall rank correlation coefficient was calculated to detect statistically significant risk factors of osteoporosis development with mineral density of bone tissue, and formed rating of factors participating in formation of low density of bone tissue for selected sample of Almaty city population. According to results of our research, such risk factors for Almaty population were: age, smoking, alcohol abuse, presence of fractures in anamnesis, complains for pain in back, presence of fractures at relatives, and low physical activity.

In formation of osteopenia and osteoporosis among men, the most important risk factors were alcohol abuse, rank correlation coefficient of which (K) amounted – 0,558, low physical activity (K=-0,439), and smoking (K=-0,303). Among women, first risk factor was complains for pain in back with rank coefficient -0,351. Second important factor was the presence of fractures at parents and brothers and sisters (K=-0,326), and the third was alcohol abuse (K=-0,280).

In conclusion, we can say that alcohol abuse and low physical activity among men, presence of pain in back and fractures in anamnesis among women play important role in formation of osteopenia and osteoporosis.

ASSESSMENT OF MEDICAL WORKERS' COMPETENCE IN ISSUES OF PREVENTION

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The goal of this research was study of PMC medical workers' knowledge level in sphere of prevention. **Methods:** we developed questionnaire which covered several parts – knowledge, skills, practical activities, relation and behavior. The research was provided in 10 PMC organizations of Almaty city. **Main results:** medical workers have not enough knowledge about safe doses of alcohol consumption, altogether 13,1% of physicians and 4,1% of nurses correctly responded to the question ($p < 0,05$). Medical workers have low level of knowledge about types, smoking stages, kinds of dependence. Thus, 21,9% of physicians and 39,7% of nurses are sure, that there are existing safe types of smoking ($p < 0,05$). 58,4% of medical workers know about Kettle index – the index of body mass, 54,1% of medical workers know how correctly to define index of body mass. Workers know about physical activity's impact insufficiently. Only 2/3 of respondents (63,2%) know, that during the physical exercises it is necessary to consider such factors as frequency, duration, intensity and types of exercises.

Formation of health status of medical workers and its assessment are under the influence of their professional knowledge and skills. This group of population is characterized by awareness concerning both action of risk factors of chronic pathology development, and professional ideas about correction of risen pathologic states. So, this investigation presents great scientific interest. There are wide-spread behavioral risk factors among medical workers. 7,5% of physicians and 5,5% of nurses take alcohol drinks, 21,2% of physicians and 12,3% of nurses smoke, 37,5% of physicians and 19,2% of nurses have overweight, 5,0% of physicians and 11,0% of nurses suffer from arterial hypertension.

Results of conducted research have shown that medical workers have insufficient knowledge about main risk factors of development of chronic noncommunicable diseases. Prophylactic activity with population is organized insufficiently well, only 2/3 of medical workers provide preventive activities constantly, using «classic» methods of health education, such as conversations, and lectures. In fact, they do not use method of organization the health clubs, weakly use visual aids, video and audio-clips and other methods.

Thus, to improve providing of qualitative preventive care, it is necessary to improve knowledge of medical workers in sphere of prevention, reconsidering the system of training and retraining health professionals with obligatory course of prevention at all levels of education.

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THE ROLE OF DISTANCE LEARNING TECHNOLOGIES IN THE SYSTEM OF CONTINUING MEDICAL EDUCATION.

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Main goal of continuing medical education is to provide the latest knowledge to high-level professional specialists to improve quality of medical care [1].

According to conceptualization of the current reforms in medical and pharmaceutical education of the Republic of Kazakhstan for 2010, there are planned developments and introduction of distance learning methods, especially for the second stage of its implementation during 2009-2010). Applying the distance learning via modern information technologies will promote formation of services market in sphere of medical and pharmaceutical education with subtle competition between educational institutions of different kinds and patterns of ownership. This will further enlarge the choice opportunities for educational and training programs [2].

To collect objective information about readiness level of physicians-therapists for continuous professional development in accordance with international standards, we carried out a study of 1106 physicians from 10 oblasts (Akmola, Pavlodar, Karaganda, South-Kazakhstan, Kzylorda, East-Kazakhstan, West-Kazakhstan, Atyrau, Mangystau, Aktobe oblasts, Astana and Almaty cities).

One of the aspects of our work was research of readiness for practicing physicians for self-training using distance learning. It is necessary to note that a positive response was expressed from 775 interviewed physicians (70%) on such means to improve their qualifications by themselves (independent work with further passing of examination and practical skills according to standard, on base of introduction of individual plans of continuous professional development by system of test units-credits). One hundred ninety (190) physicians (17,2%) think watchful about this subject, while 42 (3,8%) answered this was a bad idea, and 99 (9%) respondents did not answer.

Of those 191 (17,3%) of interviewed assessed distance learning method as «very good», 428 (38,7%) – «good», 162 (14,6%) – as «not bad», 109 (9,9%) – «bad», 14 (1,2%) – «very bad», 202 (18,3%) – found difficult to answer. According to interview results, there is obvious support by 781 respondents (71,3%) who generally assessed this form of training positively and ready to independent study of training material on standardized program with use of modern technologies and further passing of exam.

At the same time, according to our analysis, only 288 (26%) interviewed physicians have access and opportunity to work through Internet.

Thus, nowadays introduction of distance educational technologies in postgraduate training of medical human resources is a real objective, however, it's implementation requires more detailed considerations.

RELIGIOUS ACTIVITY AND AVERAGE LIFE SPAN OF OLDER POPULATION

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This study reports the influence of religious activity on level of their mortality and average life expectancy of Hebrew population living in large cities of Israel.

Research was accomplished by means of integral model developed by authors for determining of population's religious activity level. For approbation of model, we used

published data of currently existing official information systems of the country for period from 1990 till 1994. At population level we analyzed influence of number of social-demographic factors and religious activity on indices of mortality and average life expectancy of Hebrew population of 65 and older.

A strong correlation was detected between indices of religious activity of Hebrew population and average span of forthcoming life of people 65 and older ($r=+0,74$). This characterizes the lifestyle of older and religious part of Hebrew population.

Mortality level of diseases, in etiology of which psycho-emotional stress has an important role, is highest in cities with low level of religious activity.

For integral evaluation of people's lifestyle at the population level we suggest an integral model which allows the assessment of religious activity level.

It has been determined that lifestyles directed to follow moral-religious traditions of Judaism, resist destructive impact of psycho-emotional stressful situations, and promote decrease in mortality and increase in average life expectancy for older people.

METHODOLOGICAL BASICS FOR STRENGTHENING OF PREVENTIVE PROGRAMS IN KAZAKHSTAN.

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Observing negative tendencies for change in community health, there is a need for development of effective program for prevention and early detection of diseases. This would be basis for research and practical base of current strategy for saving and promoting of population health.

Because of lack of official statistical data before 2001 about health level of children between ages of 12 and 18 in rural regions, these categories of population were selected as research subjects.

To investigate such program development, we evaluated population through mass examination and current methods.

It has been shown by many researchers that large-scale screening examinations are used widely as first stage of detecting the people having different diseases and assessing the extent of their conditions for forming higher risk groups.

As a result of expert assessments, we organized our technologies to provide the screening of diseases. To define the range of validity for results of screening examinations in 2002, we implemented a pilot study in Almaty city.

It should be noted that the sensitivity of screening developed by us is severely higher than specificity (95,3% and 70,1% accordingly).

We developed and introduced the adopted program of mass preventive examinations of population based screening examination.

The program of examination of adult rural population and children at age of 12 - 18 years old consisted of several stages.

At first organizational stage, we developed tests-questionnaires, which yield pathological affection by main classes of diseases.

Then, we developed technology of organization and providing of the screening. Thus, primary screening-examination of adult rural population was conducted by middle medical

personnel by means of round of households. Screening-examination of children at age of 12 - 18 years old was provided in organized collectives (schools) by the same middle medical personnel.

At second stage of the program, we carried out primary medical examination of people in need of additional examination in accordance with legislative base of healthcare system of the Republic of Kazakhstan.

The third stage of the Program implementation consisted in rendering the necessary specialized medical care of patients, who are in need of, with appropriate recommendations on further health promotion of population.

So, use of developed methodology allowed to detect people, who are to be under dynamic observation and people, who are in need of further examination.

Based on the developed Program in 2002, adult rural (4 millions) and children's (1,5 millions) population of the republic by screening examination were covered.

Thus, as a result of our implemented research, we developed new principles, technologies, and efficiency assessment criteria of medical examination for rural population, using the new methodical approaches to definition of health level, primary and secondary prevention of the most important diseases.

SOME ASPECTS OF ADOLESCENTS' PHYSICAL ACTIVITY IN ALMATY CITY

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The researches testify to positive effect of physical activity on health outcomes [1]. The benefits of an active childhood can carry over into adulthood in that an active child is more likely to be an active adult [2]. Therefore increasing physical activity level among the adolescents is an important public health challenge [3].

Research goal is to investigate physical activity of the adolescents.

Materials and methods. Within the framework of the WHO Health Behavior in School-aged Children (HBSC) project and support of Almaty Department of Education a survey of 3261 pupils of 11-16 years was conducted using a WHO questionnaire adapted for Kazakhstan. Nested sampling was chosen. Mathematical processing was carried out using SPSS statistical software.

Results and discussion.

Frequency of physical activity. It is revealed gender differences of physical activity frequency increasing with age. 56,3 % of the boys and 29,3 % of the girls aged 11-16 years are physically active for 4-6 or more days a week (reliability of gender differences $p < 0,001$). With age the frequency of girls' physical activity (reliability of age differences of the girls $p < 0,001$) decreases, and the frequency of boys' physical activity remains rather stable all studied age period

Duration of physical activity. Gender differences of physical activity duration increase with age (reliability of gender differences $p < 0,001$). In the age of 11 -16 years 20,7 % of the boys and 7,3 % of the girls are physically active at least 4-6 hours a week. Physical activity duration of boys increases with age (reliability of age differences for boys $p < 0,005$), and physical activity duration of girls considerably does not vary.

According to the guidelines of Prochaska et al. using the moderate-to-vigorous physical activity (MVPA) measure it is recommended that every young people should be physically active 60 minutes or more on 5 or more days a week. It is determined the proportion of the young people who meet the current guidelines of physical activity. Only 14,77 % of the boys and 4,47 % of the

girls in the age of 11-16 years meet the current international guidelines of physical activity. Boys are predominated in the group of children who meet the standards of physical activity. Reliability of gender differences $p < 0,01$.

Thus the level of adolescents' physical activity is determined. Only 9,32 % of the adolescents meet the international standards of physical activity (14,8 % of the boys and 4,5 % of the girls). In comparison with the data of some European countries the level of adolescents' physical activity in Almaty is extremely low. Gender differences are characterized by predominance of boys among the physically active adolescents of all studied age groups. The level of girls' physical activity decreases with age, the level of boys physical activity insignificantly increases with age. The existing low level of adolescents' physical activity in Almaty requires organization of physical activity increase measures for this cohort of the population.

INDEPENDENT MEDICAL EXPERTISE IS THE "KEY" TO IMPROVEMENT OF THE MEDICAL SERVICES QUALITY.

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For the first time the significance and importance of the independent medical expertise was stated in the Message of the President to the People of Kazakhstan as of March 19, 2004. Further this was taken into consideration and included into the State Programme for Reforming and Development of Healthcare in the Republic of Kazakhstan for 2005-2010: "Provision of Quality of Medical Services by Creation of the System of Independent Medical Expertise".

The purpose of establishment of the institution of independent medical expertise is provision of objectivity and transparency of medical activity.

In Kazakhstan there already exists the successful experience of carrying out of independent expertise in the healthcare sector. The first project for involvement of independent medical experts was improvement of regular forms for diagnostics and treatment on the basis of Research Centre on Medical and Economics Problem in Healthcare in 2005.

For the Healthcare it is important to assess not only the appropriateness of treatment but also its cost, selection of technologies, new methods, establishment of relations between the healthcare institution and the patient, including the issues of conclusion of contracts for medical services rendering, the accuracy of the decisions, made by the heads of various levels of healthcare and their influence on rendering of qualitative medical assistance to the population.(4).

Independent expertise is necessary for assessment of the activity of medical organizations (licensing, accreditation), assessment of qualifications of medical staff (attestation, awarding of qualification categories), assessment of medical technologies (standards, protocols of diagnostics and treatment). Independent expertise is also very important for assessment of ethical principles and principle rights of the patients observation when getting medical assistance and making biomedical researches in medical institutions.

At present time serious analytical work in cooperation with the Ministry of Healthcare of the Republic of Kazakhstan is conducted by Committee for Control of Medical Services Quality,

scientists and lawyers with the purpose to develop the notion of “expert” as applicable to the national system of healthcare. It is necessary to commence training of specialists for expert activity.

To enhance the role of the independent expertise its is necessary first of all to eliminate the gaps in the legislation of the Republic of Kazakhstan in the sphere of such notions as: “expert”, qualification requirements to this profession, “independent medical expert”, “independent expertise”, “damage (harm), caused to the patient by the medical staff as a result of violation of the medical standards and norms”, “control, assessment (expertise) of quality of medical assistance”, “ethical expertise”.

At present time the procedure of interaction of independent medical experts with the state authorities is determined. The competent authority in the sphere of healthcare plans to conduct accreditation of independent experts, including withdrawal and suspension of the certificate of expert accreditation. There will be formed the data bank of independent experts, who will be involved in performance of control duties in the sphere of quality of medical services (if necessary).

In Almaty in June 2005 there was established public association the “Association of Independent Medical Experts”, the main purpose of which is to improve quality of medical services through the competent and objective expertise. The Association forms the data bank of experts (medical and pharmaceutical workers, economists, lawyers, engineers and medical engineers), who are further planned to be trained in special knowledge for issuance of expert conclusions and conduct their accreditation in accordance with the procedure, determined by the legislation. Also one of the main tasks of this association is forming of the Independent Service of Medical Experts, conducting its activity in the Republic of Kazakhstan. For today in more than half of the regions of Kazakhstan the associations of independent medical experts exist and carry out their activity.

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PROBLEM OF OCCUPATIONAL TRAUMATISM IN KAZAKHSTAN

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The goal of our research is to analyze statistics of occupational traumatism that is critical both in Kazakhstan, and in several developed countries. Last years, in Kazakhstan number of accidents with fatal outcome per 1000 workers is amounted 0,09. This index far more better than

the same index in such developed countries as Denmark (0,03), Sweden (0,03), and Norway (0,06).

In 2004-2005 there were 3348 and 3469 accidents accordingly in Kazakhstan. In 2005 from among total number of suffered women have been amounted 17%, adolescents under 18 years old – 0,2%, other rest 82,8% - men. At that 235 people were suffered from group accidents, 279 – from professional diseases, 22 – from poisonings. Number of suffered from alcoholic intoxication amounted 38 people, from narcotic inebriation – 2.

On number of suffered from accidents in all 16 regions Karaganda oblast is steady leading with index 26 per 10 000 workers, at second place is East-Kazakhstan – 16 ‰, Pavlodar oblast is third - 11,0 ‰. If in most of the oblasts during last 4 years there is trend to decreasing the index, then in such regions as Karaganda region, East-Kazakhstan, Pavlodar and Kostanay oblasts the number of suffered from accidents is not reduced.

The most quantity of suffered are qualified workers at the age of 30-45 years old, working in first shift.

In 2005 at the manufacture 357 people were died, of them 32 women, in 2004 – 345 people, 2003 - 294 people. The number of suffered with death outcome per 10000 workers in 2002-2005 also was mostly registered in Karaganda oblast, in 2005 this index was 2,13‰, in Zhambyl oblast – 1,46‰ and Kostanay oblast – 1,17‰ accordingly. In no one region this index is not reduced in dynamic, there is observed just insignificant decreasing with its further increasing. Only in East-Kazakhstan and West-Kazakhstan for last two years some stability of the index is noted, 0,99‰ and 0,52‰.

If to analyze number of suffered in accidents on types of activity, then we get next picture. Number of suffered from accidents in such industry as mining of fuel-energetic mineral resources amounted 4,7 persons per 1000 workers; metallurgy industry and production of metallic products – 3,35‰; minerals mining, except mining of fuel-energetic minerals – 3,28‰; manufacture of other nonmetallic mineral products - 3,1 people per 1000 workers. It turned out, that among all industry sectors minerals mining has leading place on traumatism, in particular such industry as mining of fuel-energetic mineral resources.

Number of died in accidents per 1000 workers is mostly marked in manufacture of other nonmetallic mineral products – 0,40‰, in chemistry and minerals mining, except mining of fuel-energetic resources - 0,34‰.

Causes of traumatism in various sectors have their own features, but the common ones for all are: unsatisfied organization of work at manufacture, violation of labour discipline, insufficient training on safe methods of work, violation of safety technique requirements.

Thus, it is necessary to provide appropriate governmental policy in sphere of labour protection, as inactivity involves huge human and also economical losses. The main task in struggle with manufacture traumatism is prevention of emergency cases at manufacture and saving the lives and health of workers.

EXPERIENCE OF CLINICAL PRACTICE GUIDELINE IMPLEMENTATION IN PHC FACILITIES OF KARAGANDA CITY.

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Key words: Clinical practice guideline, implementation, monitoring, PHC facilities

Abstract:

Clinical practice guideline development and implementation are directed to improve health care quality. It's implementation in clinical work requires systematic and step-by-step approach. An article presents a joint project of "Arterial hypertension clinical practice guideline

for PHC level” implementation in pilot facilities in Karaganda city. The article describes systemic approaches, which are presented in international literature, and adapted to PHC facilities conditions in Kazakhstan. Within that project target groups were defined, developed and implemented appropriate implementation methods. Authors summarized work, which is conducting in different directions during guideline implementation, and oriented to health care providers as well as to health service consumers - hypertension patients. This project experience will serve as a basis for programs which acceptable in existing health care system in clinical guideline implementation.

Goal of clinical practice guideline implementation is to improve organization and technology of providing of medical care for patients with arterial hypertension at level of PMC in Karaganda city.

Objectives:

1. Purposeful examination of adult population to detect people with arterial hypertension (screening) and its attraction in PMC facilities for further examination and treatment.
2. Quality improvement of medical care providing for hypertension patients (nonmedicamental treatment, drugs therapy, education of patients) at PMC level.
3. Increasing of hypertension patients’ adherence to both nonmedicamental and medicamental treatment recommended by medical workers.

Change of system of medical services providing is long-term, complex, and very complicated process. Clear identifying of the goal and objectives allowed participants to define priory directions of work and served as ground for next stages of clinical practice guidelines implementation.

MONITORING AND EVALUATION OF CLINICAL PRACTICE GUIDELINE IMPLEMENTATION

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Key words: monitoring, implementation effectiveness, clinical practice guideline, adherence

Abstract:

Monitoring and evaluation is important component of clinical practice guideline implementation effectiveness. There are many tools and methods used in that area in the world. But for Kazakhstan such documents implementation is new direction in health care system. Within the pilot project of “Arterial Hypertension Clinical Practice Guideline for PHC” implementation special tools for that were developed and used in six pilot sites in Karaganda city. They help to evaluate providers and hypertension patients’ adherence to recommendations presented in the CPG. Assessment was done once per year. First time - before implementation has started, as a baseline, by using specially developed special forms and methods for chart review and hypertension patients’ survey. For the systematic approach important to assess the process as well as results. For that purpose local healthcare system resources were used – health information system (HIS), which work in Karaganda oblast. HIS indicators are analyzed quarterly. Experience, received during the project, might serve as a basis for further improvement of monitoring and evaluation process of CPG effectiveness in Kazakhstan.

Goal: Development and implementation of monitoring and evaluation methods of arterial hypertension clinical practice guidelines' implementation effectiveness using system approach at level of primary health care organizations.

Objectives:

1. To develop and implement evaluation methods of physicians' adherence on use of clinical practice guidelines:
 - a. In detection of patients with arterial hypertension among attached population
 - b. In management of registered patients with arterial hypertension
2. To develop and implement the evaluation methods of hypertension patients' adherence to recommendations of physicians according to clinical practice guideline being implemented.
3. To develop and implement monitoring indicators of management results of hypertension patients at level of institutions and city as component of systematic approach.

CHRONIC NONCOMMUNICABLE DISEASES: FROM TREATMENT TO PREVENTION AND HEALTH MANAGEMENT

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Chronic noncommunicable diseases (CND) are actual problem in Kazakhstan. Conducted retrospective analysis disease level and mortality has shown that there is stable growth of socially-significant noncommunicable diseases in the country. We also detected, that Kazakhstan has high prevalence rate of such chronic diseases as cardio-vascular diseases (CVD), indices of which are 20,28%, chronic obstruction lung disease (COLD) (11,63%), digestive organs diseases (DOD) (35,35%), urinary system diseases (USD) - (11,77%), and diabetes - (6,94%).

High prevalence of chronic pathology is associated by lifestyle of population. On data of social-hygienic investigation of lifestyle risk factors we detected, that in average 31,91% of respondents smoke, 62,82% - take alcohol drinks, more than 2/3 (71,98%) lead sedentary lifestyle (i.e. have behavioral risk factors). More than 1/3 of population or 36,39% have overweight, and 12,77% of respondents have arterial hypertension, i.e. biological risk factors.

We used mathematical and statistical methods to detect evidence of relation between chronic pathology and lifestyle of people. These methods allowed us to identify reliable casual ratio between risks and chronic noncommunicable diseases, to assess odds ratio of diseases rising in the group with risk factors, to define relative risk of diseases. On results of research the most frequency of relation between development and prevalence of CNDs with risk factor is marked between cardio-vascular diseases, chronic obstruction lung diseases and smoking. The overweight has strong statistically reliable relation with cardio-vascular diseases. Impact degree of each factor on CNDs development: smoking - 0,218, alcohol - 0,236, overweight - 0,414, low physical activity - 0,391.

One of the methods directed to detection of significant risk factors and identifying of forecasting values, the most appropriate is use of regression analysis and logistic regression. By using of regression analysis, in particular, logistic regression, we have determine probability forecast of development of one or another chronic pathology depending on level of lifestyles risks' prevalence [1, 2]. That gives possibility to manage chronic noncommunicable diseases

through risk factors control, to define and accept the most effective and evidenced managerial decisions from point of economical view, to forecast and to plan preventive actions.

Research results have shown that according to model and received coefficients values smoking increases odds ratio of "CVD development" and "CVD non-development" 1,17 times as much, COLD - 1.13 times as much, DOD – 1,24, diabetes – 1,15. Taking an alcohol increases odds ratio "CVD development" and "CVD non-development " 1,11 times as much, diabetes – 1,18 times, urinary system diseases – 1,10 times. Overweight increases odds of CVD development 2,01 times as much, DOD – 2,70 times, diabetes – 1,92 times. Also biological risk factors, which are consequence of behavioral ones, such as hypercholesterolemia and arterial hypertension have been assessed.

Thus, the results of this study of incidence of chronic noncommunicable diseases, mortality, chronic pathology prevalence, risk factors among adult population, assessment of interaction of lifestyle factors and chronic diseases testify about necessity of strengthening the preventive direction of health system development. That means reconsidering of existing approaches to diseases prevention, establishing of new models of prophylactic interventions, directed to integrated solution of detected problems though use of contemporary methods in the context of various population categories.

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IMPACT OF SOME RISK FACTORS ON FORMATION OF HEALTH FOR SCHOOL CHILDREN

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As health formation, health level, adaptation level of organism «stand-by capacity» in child and adolescent age present the greatest interest for preventive medicine. Condition of children's health, as it is well known, occurs under influence of big number of risk factors, among of which the most important are ecology, lack of required hygienic conditions in educational organizations, non-observance of evidence-based conditions of training and character of training process.

During last ten years, large number of risk factors was found that effect the adolescents' health. Among of them, along with social-economical and ecologic risks, includes innovative systems of training, which are conditioned by reforming of school education, plays important role. In the new profile of educational organizations (lyceum, gymnasiums, and private schools with deep learning the number of subjects) we are observing satiation of training programs and intensification of training process.

Hence, with aim of determining main impacting factors on forming of children' and adolescents' health we conducted an interviewing among the school children of 9 new educational organizations (5 gymnasiums, 2 lyceums, and 2 private schools), located in different parts of Almaty. In total, we interviewed 1575 school children of various age (9-15 years). Questions were grouped for 3 blocks: block for school children, block for parents, and block for medical worker.

From the result of analysis of these interviews, we defined different impact degrees of various factors on forming of school children' health. General morbidity of school children dominated for 12,5% at children, living and studying in conditionally ecologically unfavorable part of city.

In social-hygienic factors, there were fixed impact of mainly unsatisfied living condition (increased incidence - 7,9% and complains for discomfort feeling were higher than 5,4%) and incorrect nutrition (62% of children with diseases of gastrointestinal tract, endocrine system).

Among biological factors, there are impact of inherited predisposition (13,7%), age (12,4%), and diseases of children' mother transmitted during pregnancy (15,3%), and also diseases transmitted by child himself for the last 5 years (2001-2005) - (16,32%).

Among the school internal factors, there is disparity of functional capability of adaptation mechanisms of school children in real activity: schedule's overload by classes - 74%, non-observance of break rules almost in all educational organizations, repletion of classrooms (46%), ignoring the day regimen (68,3%), physical culture (59,7%).

Thus, to a definite extent analyzed data show modern characteristics of health development, predetermine health and quality tendencies of growing up generation that indicates necessity of searching the solution of current problems.