

# TABLE OF CONTENTS

## **ABOUT SOCIAL CONTENTS OF HEALTH REFORMS**

**M.A. Kamaliev, A.B. Asatova**

## **ANALYSIS OF CURRENT HEALTH CARE SYSTEM AND NEW APPROACHES TO NEW ORGANIZATION OF HEALTH CARE IN THE REPUBLIC OF KAZAKHSTAN.**

**T.S. Khaidarova, R.N. Nurmukhanbetova**

## **APPROACHES TO IMPLEMENTATION OF THE INTERNATIONAL STANDARDS ISO 9001:2000 AT SANATORIUM-RESORT ORGANIZATIONS OF THE KYRGYZ REPUBLIC.**

**E.T. Bokchubaev, M.K. Kulzhanov, M.M. Kapparov**

## **NEW APPROACHES IN THE DEVELOPMENT OF FINAL RESULTS INDICATORS AND ANALYSIS OF PHC ORGANIZATIONS' ACTIVITY**

**A.B. Asatova**

## **MODERN PRINCIPLES OF INTERNATIONAL STANDARDS OF ISO 9000:2000 SERIES IN THE FRAME OF SANATORIUM-RESORT FIELD**

**M.M. Kapparov, E.T. Bokchubaev, M.K. Kulzhanov**

## **CORRELATION BETWEEN HEALTH AND FACTORS OF NUCLEAR TESTING AREA**

**U.I. Kenesariev, N.B. Kozhakhmetov, Zh.D. Bekmagambetova, M.K. Zhelderbayeva**

## **AUTOMATIZATION OF THE DIAGNOSTIC-TREATMENT PROCESS IN RURAL HEALTH CARE, CASE STUDY OF "CRH OF ESKELDY DISTRICT", DEVELOPMENT PROSPECTS**

**I. Albakov, E. Tcelisheva**

## **APPLICATION OF METHODS OF MATHEMATICAL MODELING IN ESTIMATION OF PSYCHOSOMATIC STATUS IN MODERN SCHOOLCHILDREN.**

**Sh.E. Karzhaubayeva**

## **APPLICATION OF INNOVATIVE TECHNOLOGIES IN RURAL HEALTH CARE**

**I.N. Albakov, E.N. Tcelisheva, O.I. Bekturova**

## **DYNAMICS OF A MAIN INFECTIOUS MORBIDITY IN THE REPUBLIC OF KAZAKHSTAN**

**K. N. Dzhulanova**

## **SOME ANTHROPOGENIC PROBLEMS OF SOIL ECOLOGY IN REPUBLIC OF KAZAKHSTAN**

**K.N. Dzhulanova**

## **BIOETHICS IN THE REPRODUCTIVE MEDICINE**

**S.B. Baikoshkarova**

## **EPIDEMIOLOGY AND ECONOMICAL EFFECTIVENESS OF PREVENTION OF PARENTERAL HEPATITIS B AND C**

**G.K. Kazbekova, G.M. Kembabanova, N.Yu. Azimbayeva**

**CHILD MORTALITY DUE TO INJURIES AND VIOLENCE IN ALMATY CITY**

**G.M. Ussatayeva, A.E. Khairushev**

**STATISTICS IN MEDICINE AND HEALTH CARE: MODERN TECHNOLOGIES OF APPLYING NON-PARAMETRICAL METHODS –  $c^2$  AND STANDARDS RESIDUAL TESTS**

**V.L.Reznik, T.F.Balabayev, S.A.Yegeubaeva**

**EVALUATION OF POPULATION'S SATISFACTION WITH MEDICAL CARE QUALITY IN THE FRAME OF THE INSTITUTE OF FAMILY MEDICINE BY THE RESULTS OF THE SURVEY OF THE POPULATION OF BATKEN OBLAST**

**Ch.O.Sattarova**

**HEPATITIS B – URGENT HEALTH CARE PROBLEM**

**M.K. Kulzhanov, S.G. Nukusheva, A.M. Askarov, G.K. Kazbekova**

**FEATURES OF DIAGNOSIS OF THE TUBERCULOSIS OF EYES**

**A.B. Doshakanova, A.S. Rakisheva, A.B. Balmuhanova**

**LOGISTIC IN OPERATIVE GYNECOLOGY**

**E.N. Lazareva, I.B. Turabaeva, T.G. Tulegenova, V.S. Dzhaltyrov**

**LEGAL ASPECTS OF THE MEDICAL RIGHT**

**I.P. Georgieva**

**MEDICAL-SOCIAL ASPECTS OF REPRODUCTIVE HEALTH OF ADOLESCENTS (LITERATURE REVIEW)**

**A.E. Samigullina**

**PROBLEMS OF TELECOMMUNICATIONS IN HEALTH CARE**

**L.K. Kosherbayeva**

**CHARACTERISTIC FEATURES OF FORMATION AND REALIZATION OF REPRODUCTIVE FUNCTION IN ADOLESCENT GIRLS (LITERATURE REVIEW)**

**A.E. Samigullina**

**MENTAL HEALTH CARE IN KAZAKHSTAN: PRESENT AND FUTURE. FEATURES OF MENTAL HEALTH SERVICES IN ALMATY.**

**S.A.Yegeubaeva, A.A.Terloev, D.A. Terloeva**

**QUALITY OF LIFE ASSESSMENT IN ALMATY AGEING POPULATION**

**S.A. Yegeubaeva, Zh. Kuanyshbay**

**REGULATORY BASE OF THE “ALMATY EMERGENCY SERVICE” HEALTH CENTER**

**D.Abuov**

## **ABOUT SOCIAL CONTENTS OF HEALTH REFORMS**

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During the period of radical modernization of health care system, the choice of the most appropriate functional-organizational model is one of the most important tasks of public health specialists. Assurance of equal access, high quality of medical and social services under the effective distribution of resources – are those aims that not only determine health policy but also constitute the basis of life activity the whole society.

The specific feature of the market is its dual social nature. On the one hand market economy has a number of undisputable social advantages including economic independence and free market choice. But on the other side market as an economic management mechanism is unmerciful and unconcerned. The system of universal human values exists out of the field of market mechanism. Market objectively generates negative social facts and processes, including the differentiation of the population by material welfare, limitation of the access to material and intellectual values.

The peculiarity of the health care reform is in its direction from up to down as it were in population interests, but it doesn't enjoy population's support and even understanding. People already are used to pay for medical services and realize that health costs very expensive, and they are ready now to share the financial responsibility. At the same time, a considerable part of the population lives below the poverty line and is not able to pay for medical services. Part of the population believes that a quality of services is related to physicians' professional competences and modern equipment. The society is matured to share the responsibility between the Government, employer and population for health of the nation, for health of the future generation.

The new social system has to assure the society in its effectiveness, guaranteeing legal basis for protection of population rights, provision of adequate quality and size of medical care and consumer's needs satisfaction.

In the choice of the further optimal way of public health development Kazakhstan should take into account the international trends, historical analysis of which, and also the own experience, notifies in advance about the danger of following only to one approach in activity, either it a predominant liberal or governmental-monopolistic health care model.

With that, at the choice of the ways of health care system modernization the preference should be given to cost-effective organizational forms of medical and social services. It is confirmed by the selected strategy of health care financing – to pay from public funds only for really necessary and effective things. Budget financing has to secure and provide population with obligatory volume of social benefits, in health care – guaranteed benefits package.

Relevance of pragmatic approach is reflected in organizational structure of medical care, which expressed in priority of prophylactic activity compared to curative, general practice – to specialized forms, at home care – to hospital, ambulatory care – to stationary. It is clear, that the system functioning in such a way is not only economically efficient but also effective enough, appropriate to the real population needs, facilitates considerable intensification in the work of all chains of the system of medical care, and affects the social and material status of medical workers.

Instability and imbalance of economy, incompleteness and inconsistency of legislative regulation, inefficiency of tax and in general fiscal policy of the government combined with events of socio-psychological nature and other reasons contributed to the development of “grey” economy, including in health care system.

Further neglect and rejection of principal actions on elevation of physicians' status in social-economic aspect and public opinion could lead to serious negative consequences in

organization and quality of medical care. It is impossible to physicians to gain professional authority under the current situation without governmental support. Each country chooses its own way of realization of the social human rights. And these ways depends: firstly, on government adherence to realize successfully accepted social warranties; secondly, on conditions, possibilities and level of development of the government at the specific time period; and thirdly, on the direction towards which the government is going to move. Republic of Kazakhstan is building the state with socially oriented economy that secures the citizens with basic social warranties, one of which is their health protection. Health of the nation is essential prerequisite of the welfare and competitiveness of the country, prerequisite of national safety.

## **ANALYSIS OF CURRENT HEALTH CARE SYSTEM AND NEW APPROACHES TO NEW ORGANIZATION OF HEALTH CARE IN THE REPUBLIC OF KAZAKHSTAN**

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Health care system of the Republic of Kazakhstan despite on previous reforms aimed to improve functioning of the system and health of the population has significant disadvantages. Health care remains expensive and non-effective service. Present time in connection to changed economical situation it is impossible to support health care system.

To identify possibilities of health care system to exit from complicated situation under conditions of global economical crisis we conducted critical analysis using modern alternative methods of evaluation of health care system – SWOT analysis.

**Advantages (Strengths)** of current reforms in health care – national programs on resource supply of medical facilities, increasing of human resources capacity, reconstruction of the network of medical organizations in rural area, immunization of population, programs on HIV/AIDS, issue of orders of the MoH to conduct medical surveys, protection of mother-and-child health, screening studies to reveal prevalent non-communicable diseases, propaganda of healthy life style in population.

**Disadvantages (weaknesses):** Health care is not reformed, remains under governmental regulation with elements of private sector, with old methods of management, narrow approach of evaluation of quality in health care. They do not use effective management, principles of financial management; do not introduce alternative methods of management, lack of informational resources, poor surveillance system, poorly developed indicators of effectiveness and etc.

**Opportunities** – transforming of governmental system with elements of private medicine into modern public system, introduction of mechanisms of responsibility, develop intersectoral collaboration in preventive work, reforming of governmental health care into public health.

**Threatening: imperfect legislation, absence of laws of direct action,** insufficient work of local authorities on health protection, provision of sanitary and epidemiological wealth, and healthy life style on primary prevention, ineffective quality management, inconsistency between modern principles of contemporary public health care system, absence of motivation for people working in health care, inadequate political commitments to preventive programs, global economical crisis, flow-out of specialists.

The main reason to reform health care in the Republic Kazakhstan is that existing paradigm of existing health care system and management is contradicted with real condition of legislative base, providing functioning of health care system.

# **APPROACHES TO IMPLEMENTATION OF THE INTERNATIONAL STANDARDS ISO 9001:2000 AT SANATORIUM-RESORT ORGANIZATIONS OF THE KYRGYZ REPUBLIC**

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The issues of continuous quality improvement of health care in the Kyrgyz Republic are pushed currently on the new levels of actuality and importance in the frame of the realization of the national program for health care reform “Manas taalimi” for the period 2007-2010. By many authors’ opinion, the tool for achievement of the defined level of quality and effectiveness of medical care is the system of health care quality management, which is developed, documented, implemented and kept in working state by the health care organization, and correlates to the requirements of the international standards of ISO 900 series. The following features of the implementation of quality systems in accordance with ISO series 9000 relating to health care are determined by the specifics of medical service:

1. The object of the medical service is human being (group of people, population of the region or country), and the subject - his (their) life and health, the price of decreasing the quality of which is too high, therefore medical service is standing out of the group of social-cultural services.
2. The character of health danger or damage while the provision of medical service usually is complex and depends on participation of several persons, rendering the service, as well as on patient peculiarities (age, gender, combination of diseases, social and individual circumstances).
3. Patient is and active customer of the process of medical care, therefore realization of the deontological principles is extremely important in rendering medical care.
4. Patient is not able to assess the health worker’s qualification fully; his satisfaction depends on the level of the claim.
5. The absence of medical knowledge makes the patient to give full credence to the doctor, but the patient and physician’s concerns can’t coincide in principle.

The process of implementation of the new system of therapeutic care quality involves primary analysis of the activity of the chosen sanatorium-resort organizations, conduction of an informational-consulting seminar on the system of quality management for medical staff. During the seminars it is necessary to pay special attention to the most important component of the system – training of the organization’s staff to the basis of quality management by requirements of ISO series 9000, first of all, by eight principles, which present the conceptual base for the development and implementation of the new system of quality management. Involvement of the all management and technical staff to the training process is the crucial requirement for achievement of the high effectiveness of the system of quality management.

Seminar classes should be conducted in the form of dialog and the topics should be corrected depending on the specifics of the functioning of sanatorium-resort service and the contingent of the each particular group.

The next step should be the development by the working group of the policy in the field of quality on the base of conception of its continuous improvement defining the key processes of quality management, development of the training program for the medical staff on specific methods of quality management. Development of the basic policy statements in the quality field

will be done not only based on the opinion of organization's personnel, but also patient's opinion by the method of anonymous independent survey.

The problem of patients' involvement into the system of quality management could be solved successfully with the aid of the "conception of permanent improvement" (PDCA) (W. Edwards Deming), when patient (and/or his relatives) realizes that the process of medical-social services presents methods and tools for achievement of the specific goals. At that patient is required not only be adherent to all doctor's assignments, but also to be an active participant of the process of own rehabilitation.

For successful realization of the given concept the "Health Schools" should be created for patients and vacationers of the sanatorium-resort organizations of Kyrgyzstan.

The another significant stage in quality management system implementation is the development of a superstructure for given process in each subdivision, which involves the creation of the Committee on quality and clinical safety, approved by the order of the Ministry of Health of the Republic of Kyrgyzstan №146 from 27.03.2006 as a responsible part. For improvement of the effectiveness of quality management model inculcation it is necessary to use morning and clinical conferences, hospital conferences, conferences devoted to analyzing the activity of the Committee on quality and clinical safety, where the issues of quality are discussed.

Thus, involvement of a whole staff into the process of implementation and realization of the system of quality management after the training is the main requirement for the model of continuous quality improvement. Only in this case a given system in the frame of the model of continuous quality improvement, particularly the industrial model, foresees transformation from the bureaucratic (hierarchical) system to organic (adaptive) one, having decentralized organization.

Finally, one of the most important conditions of successful functioning of the system of therapeutic quality management is the assurance of continuous monitoring of the processes of the given system with the aid of optimal indicators and quality standards for evaluation of their effectiveness. The modern process of quality monitoring involves the development of dynamic control limits of the indicators of quality, transformation from supervisory control to internal (intraorganizational) monitoring through definitions and elimination of true reasons of defects and deviations autonomously.

## **NEW APPROACHES IN THE DEVELOPMENT OF FINAL RESULTS INDICATORS AND ANALYSIS OF PHC ORGANIZATIONS' ACTIVITY**

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Key words: public health services, primary health care.

There was developed a system of monitoring of primary health care (PHC) organization's activity by the final results, which includes the following organizational-functional blocks of monitoring: material and technological maintenance; personnel maintenance; preventive activity; curative-diagnostic, medical rehabilitation; an economic efficiency; an integrated estimation of availability and quality of primary health care.

Integral estimation of PHC quality and availability by final results, in its turn, was composed from the following components:

1. Average annual rates of the change for each indicator.
2. Ranking score of indicator's value
3. Weight of each indicator within the general number.

4. Numerical score of each indicator.

5. Overall estimate of scores.

At that, excellent quality of various PHC indicators was assessed as a sum of scores equal to 100; satisfactory quality – less than 50%; unsatisfactory – 10% and less.

Among the indicators of financial maintenance of PHC organizations the most important are volume and per capita expenditures, which are ranked as number one. On the second place are unit costs per 1 treated patient in polyclinic, day hospital and at home; on the third – share of expenses for salary; fourth – renewal of the basic funds, purchase of medications, expendable materials; fifth – share of overhead cost and rate of decrease of accounts payable by main specifics of budget classification.

Under the study of the quality of material and technological maintenance of PHC organizations five rating groups were formed based on the analysis of average annual rates of change of the selected indicators.

The first rating group includes those of them, which characterize accordance between the capacity of PHC organizations and size of covered population; building and facilities – to existing standards; provision of the main structural-functional units by means of communication; provision by telecommunication and office equipment in accordance to the real needs; etc. The second rating group is composed by indicators, related to provision with up-to-date diagnostic and treatment equipments. The third group includes the indicators estimating the regime of work of registry, conditions for population conveniences. Fourth group – are the indicators of provision with soft and hard inventory. Fifth – correspondence of handling of the diagnostic and treatment equipment to existing standards.

Thus, conduction of integral analysis of the quality of material and technological maintenance of PHC organizations allows analyzing the input of each of them separately, and also contribution of the formed groups of indicators to the general estimation of the one of basic conditions determining the quality of PHC.

Developed methodical approach to evaluation of the quality of PHC also includes multifactor analysis of quantitative and qualitative components of personnel maintenance of PHC organizations.

At that, obviously that simultaneous estimation of ranking and numerical score, based on consideration of dynamic changes in volume and structural components of personnel maintenance, is the important part of integral estimation of the quality of PHC. The developed methodic widens the methodical capacities in evaluation of personnel potential in general and could be modified for evaluation of the quality of other kinds of medical services by final results of activity.

Integral estimation of the quality of personnel maintenance of PHC organizations, preventive, curative-diagnostic and medical-rehabilitative activity, quality and accessibility of PHC mother and child services was conducted based on the analysis of average annual rates of change of a selected indicators, determination of their weight and conversion into scores.

The developed methodical approach to the integral estimation of the quality of curative-diagnostic care at PHC organization by final results is an efficient tool of monitoring of the effectiveness of this activity in the continuous link of organizations. On the other hand, managers will have unbiased criteria and technologies of differential evaluation of the quality of work of medical professionals, which in its turn could become an evidence base for development of differential payment for labor.

The results of rating and expert evaluation of the quality of diagnostic and medical-rehabilitative activity of PHC organizations by final results, based on average annual rates of change of the selected indicators, showed that among the number of the most important indicators on the first place were indicators characterizing the volume and structure of curative and medical-rehabilitative care, rendered by general practice physician and narrowly focused specialists. Naturally, that in accordance with the developed methodic of score estimation they gained the highest numbers of score. On the second rating place were the indicators regulating

the volume and structure of diagnostic visits of patients; third – indicators reflecting amount of medical malpractices on the different stages of curative-diagnostic process and, finally, fifth – number of reasoned patient's complaints for unsatisfactory quality of medical care.

It could be supposed that the application of the developed method of appraisal by points of the quality of curative-diagnostic care enables the managers to stress on the increase of its volume and improvement of the structure, which is the main priority in the activity of PHC organizations.

The characteristic feature of the developed approach in the estimation of the quality and accessibility of the PHC to child population is that the selected indicators were calculated and analyzed on per 1 district pediatrician terms. This will enable the realization of differential individual evaluation of the quality of work of each physician, to compose their rating, comparative characteristic and in general to improve the effectiveness of curative and preventive activity.

Therefore, suggested set of indicators allows assessing quantitative and qualitative aspects of PHC organization to population. The results of the conducted researches enable the improvement of organization of preventive, diagnostic and medical-rehabilitative process not only for securing the citizens with guaranteed benefits package of medical services, but also present by itself the evidence base for improvement of effectiveness and quality of curative and preventive activity of PHC organizations. The developed methodical tool of research, conducted complex analysis and evaluation of final results of the activity of PHC organizations, integral estimation of detected relationships enable consistent and systematic study of the processes of forming the quality of medical services at PHC organizations, which could serve as an efficient management tool for improvement of the quality and accessibility of primary health care to the population.

## **MODERN PRINCIPLES OF INTERNATIONAL STANDARDS OF ISO 9000:2000 SERIES IN THE FRAME OF SANATORIUM-RESORT FIELD**

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The main goal of the health care system in the Kyrgyz Republic at the current stage is organization of new qualitative models of infrastructure and management schemes, based on implementation of innovative technologies and applied in accordance with the main strategic aims and objectives of an organization. In this context the most actual problem is the development of the system of health organization management based on quality. We think, that the solution of this objective is possible with the means of the existing system of quality management in the organization, built upon the standards of ISO 9000:2000 series.

The ISO standards answer the question what should be done in the organization for creation of the basis for permanent activity improvement. And practical aspects of the implementation of ISO standards of new version are the matters of special attention.

International standards ISO 9000 are implemented in 150 countries of the world and in many countries they are accepted as national standards. There are about 2% of certified enterprises in Russian Federation, about 70% in EU countries. At the same time no one medical organization in the Kyrgyz Republic has an international certificate of quality.

The aim of the given article is to provide rationale for the aspects of the main principles of the above mentioned standards in the frame of sanatorium-resort service's activity. These principles are the following:

1. Orientation to the consumer;
2. Leadership of a manager;
3. Involvement of a workers into the process of quality improvement of therapeutic care;
4. Process approach;
5. System approach;
6. Permanent improvement;
7. Evidence based decision making.

Summarizing, the international standards of OSI 9000 series are devoted for quality management in the organizations of any type, including sanatorium-resort and rehabilitative profile, and have a universal character. The development of the corresponding methodical recommendations and specific technologies of implementation of the system of therapeutic care quality management in sanatorium-resort and therapeutic organizations is required currently. The above mentioned standards of the system of quality management are have a great potential in the field of therapeutic care culture and quality improvement and even now are becoming in demand by practical health service.

## **CORRELATION BETWEEN HEALTH AND FACTORS OF NUCLEAR TESTING AREA**

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The information about formation of holes in surface near of "Azgyr" testing area was appeared at the end of 90-s. In this connection the estimation of radiating safety, both on testing area and on adjoining to them territories of Atyrau oblast represents the certain scientific interest.

Balkuduk and Suyundyk rural counties were chosen for study, Ganyushkino town – as a control site. The total size of population in target sites was more than 9,000 people (50.4% - males, 49.6% -females), and around 13,000 in the control site.

Soil contamination of testing area by  $Cs^{137}$  and  $Sr^{90}$  was not equal and was higher than average global contamination accordingly up to 101.6 and 29.7 times; in settlements around testing area activity of  $^{137}Cs$  was significantly lower, but higher than global average level up to 1.7 times, whereas in control site – at the normal level.

Studying of incidence among rural population in Balkuduk and Suyundyk counties of Kurmangazy district, adjoining to " Azgyr" nuclear testing area, was carried out according to the data of appealability of the population to the medical facilities in 2002-2004, and according to the results of the profound medical survey which has been carried out with our direct participation and involvement of specialists from Kazakh National Medical University and KazHMY and Atyrau Oblast Office of health care in 2004. The coverage by medical survey was about 11 % of selected target group.

Results of complex profound medical survey of population living around testing area revealed high level of incidence: in Balkuduk rural county – from 3,131 per 1000 of population

(Azgyr town) to 4, 256.8 per 1000 (Balkuduk town); in Suyundyk – from 3,818.2 per 1000 (Zhalgyzapan town) to 4,136.6 per 1000 (Suyundyk town). These data significantly exceeded indicators of appealability to the medical facilities: from 5.2-5.6 times in Suyundyk county to 5,9-8,0 times in Balkuduk county.

In general, the largest indicators of incidence of rural population living around testing area, which exceeded similar control indicators in 1.49-3.46 times were revealed in classes “Diseases of gastrointestinal system”, “Diseases of cardiovascular system”, “Diseases of urinal system”, “Diseases of blood”, “Mental disorders”, and “Cancer”.

Thus, results of conducted studies permit us to conclude:

1. functioning of testing area during many years is a cause of soil contamination by anthropogenic radioactive nuclides and heavy metals.

2. Health status of population living in Balkuduk and Suyundyl rural counties is worse than health status of control group. The indicators of incidence of rural population living around testing area, which exceeded similar control indicators in 1.49-3.46 times were revealed in classes “Diseases of gastrointestinal system”, “Diseases of cardiovascular system”, “Diseases of urinal system”, “Diseases of blood”, “Mental disorders”, and “Cancer”.

3. Multiple-factor analysis revealed statistically significant dependence ( $R>0.93-0.98$ ;  $P<0.005$ ) of incidence levels among population living in testing area and incidence according to different class diseases, and degree of contamination by heavy metals and radioactive nuclides (Cs-137, K-40, Pb, Cu, Cd, Co, Zn).

4. Developed models could be used for evaluation of forecasting situation of incidence among population living around testing area.

## **AUTOMATIZATION OF THE DIAGNOSTIC-TREATMENT PROCESS IN RURAL HEALTH CARE, CASE STUDY OF “CRH OF ESKELDY DISTRICT”, DEVELOPMENT PROSPECTS**

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The problem of automatization of the diagnosis and treatment process in health care in general and particularly in rural health care is standing very sharp presently. It connected to such realia of the modern life as a broad stream of medical information, related to a new equipment, new methods and technologies of the curative-diagnostic process, innovations in the field of pharmacy, various orders and guiding documents in health sphere. It becomes more difficult for the physicians to master all this information and timely apply in practice due to catastrophic time shortage.

The aim of creation of automated management system in the SPE “CDH of Eskeldy district” – is to build integrated distributing informational system, which provides inclusion of all CDH services into the integrated complex based on the application of a modern informational technologies and alongside with this, effective operation of curative-diagnostic process on a district level, dynamic control of a bed’s fund, decrease of a labor costs and hours of a specialist physicians due to operational efficiency of interaction between departments, development of a patient-specific registration of a district population.

The main objectives of the automatization of a curative-diagnostic process of management at SPE “CDH of Eskeldy district” are the following: to improve the quality of

health care rendered to the population of the district, to provide the continuity of diagnostic examinations and treatment between hospital, polyclinic, outpatient clinic and aid posts, to prevent duplication of diagnostic examinations based on operative data exchange, to standardize diagnostic and treatment schemes based on “Protocols of diagnosis and treatment of the diseases in the Republic of Kazakhstan”, to use the technologies of introduction of the templates and reference guides, developed by the specialists of CDH with the aid of various normative documents of the Republic of Kazakhstan (reference guides on diagnosis ICD-X, reference book of the program ACS-hospital, ACS-pharmacy, ACS-stat. (Medinform)), forms of the primary medical documentation of health care organization, approved by the order of the MHRK № 332 from July 8, 2005 “On approval of the forms of primary medical documentation of health care organization” and other documents), control on timeliness of the medical care rendered to the district population, saving health professional’s time in the work with medical documentation.

To introduce automatization into the curative-diagnostic process SPE “CDH of Eskeldy district” has the following material-technical base: staff trained to work with computer equipment, server for keeping and transforming information, 97 computers, connected to each other by the local network and having access to Internet, several dozens units of copying and scanning technique, WEB-cameras, for conducting the distance learning of the staff and videoconferences with the leading clinics of the country, video projector, possibility of distant access to work with the program.

The main stages of the automatization of diagnostic-treatment process in SPE “CDH of Eskeldy district” includes the creation of a data base for population groups and personalized registration of the district population, electronic history of disease (EHD), automated work place (AWP), and electronic medical archive (EMA). At SPE “CDH of Eskeldy district” two programs were developed and functioning presently: “Hospital” and “Polyclinic”.

Automatization of the diagnostic-treatment process of the district hospital brings substantial economic and organizations results even today. These are: high quality and rationality of doctoral assignments, simplicity of routine control, shortening of the terms of patient’ examination and treatment, better clinical outcome, and many other effects.

## **APPLICATION OF METHODS OF MATHEMATICAL MODELING IN ESTIMATION OF PSYCHOSOMATIC STATUS IN MODERN SCHOOLCHILDREN**

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Educational reforms, dictating higher requirements to adolescent pupils, increase the risk of realization of psychosomatic disorders in adolescents. This could explain the high prevalence of psychiatric disorders of behavior in adolescents in Astana and Almaty cities, where they experience great informational pressure. Overweight of the negative feelings brings to appearance of nervousness in adolescents that could provoke development of the serious physical and behavioral deviations.

### **Materials and methods**

In 2007 the National Centre of Healthy Lifestyles Development conducted research on key behavioral and contextual health factors in 4136 children of school age (11,13,15 years old) by WHO methodology (HBSC) in Almaty, Astana and Shymkent.

### **Results**

It was founded out that in the last 6 months 37,5% of pupils recognized a state of nervousness. Nervousness – is a mental state, characterized by emotional instability, anxiety. Among the possible reasons for occurrence of anxiety in adolescents the following could be: physiological characteristics (peculiarity of nervous system – higher sensitivity), individual features, relationships with peers and parents, problems at school.

### **Conclusions**

The most growth of behavioral deviations is observed in adolescent age, at the period of passing from childhood to grow-up condition. By the analyzed results of the study it is necessary to conduct a work on violence prevention in family, at school and at the street, to elevate self-esteem of schoolchildren (personal subjective assessment), to conduct actions aimed on promotion of physical activity of children. Early detection and rendering of psychological aid to a family, ability to contact easily with parents (especially with father) could help adolescents to revise, critically realize own behavior, relation to other people and itself, create conditions for normal course of personal enhancement.

## **APPLICATION OF INNOVATIVE TECHNOLOGIES IN RURAL HEALTH CARE**

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**State Public Enterprise “CDH of Eskeldy district”**

The importance of informational technologies cannot be overestimated presently, the thriving development of which influenced the development of domestic health care as well. In the rural health care the perspective direction of high technologies’ application is transmission of digital images by computer networks. The given technology could be used in conducting videoconferences of rural patients with a specialists of domestic as well as foreign specialized clinics.

The proposed article presents the experience of practical application of the system of video-IP-telephony Skype in conditions of the central district hospital of Almaty oblast. At SPE “CDH of Eskeldy district” videoconsultations of the rural patients are conducted with the specialists of the Medical Centre of “Semipalatinsk State Medical Academy” (MC “SSMA”). Collaboration is conducted on a basis of the contract, ensuring mutual liabilities of both sides on provision of regular video consultations. Specialists of the Medical Centre of Semipalatinsk State Medical Academy are consulting our patients on following sections: angiosurgery, gastroenterology, hematology, intensive therapy, cardioreumatology, neurology, neurosurgery, otolaryngology, and pathology of newborns, maxillofacial surgery, X-ray diagnosis, and other sections.

The goal of conduction of videoconsultations of patients of the district hospital with the specialists of the MC “SSMA” – is prehospital consultation for specification of a diagnosis and decision of issues related to expected hospitalization, operations, assignment of a treatment in a highspecialized health organizations, urgent consulting of patients in very serious condition, including children, and other questions.

Selection of the patients for videoconsulting are conducted by physicians of the Central District Hospital among a number of hospital or outpatient patients who need highspecialized consultation.

Thus, a technology of conducting videoconsultations by the means of such a simple and inexpensive system of audiovisual communication as video-IP-telephony “Skype” enables

transparent interaction between patients and physicians not bounded to geographical, time and social barriers.

Overall, the application of cheap and mobile IP-technologies in rural health care makes closer a high specialized medical care to rural inhabitants, not only by shortening patients' financial costs for the trips to cities where the big medical centers are stated, but also saves a time (quite often very valuable), providing high level of diagnosis and treatment independently from patients' placement.

## **DYNAMICS OF A MAIN INFECTIOUS MORBIDITY IN THE REPUBLIC OF KAZAKHSTAN**

**K. N. Dzhulanova**

**Kazakh National medical university named by S.D. Asfendiyarov**

In spite of the sharp decline of infectious diseases morbidity in the recent decades of the previous century, infectious diseases remain one of the important health care problems because of the modern medications. The Republic of Kazakhstan is not exclusion. The process of health care reforming takes place in the republic during the last years, which aimed on achievement of a higher quality of medical services.

Table 1- Dynamics of a main infectious morbidity in the RK  
During 2004-2007 (per 10000 population, the data from RSES)

Diseases	2004	2005	2006	2007	Dynamics of morbidity in %
Salmonellosis	14,9	13,2	15,76	20,8	+28,2
Bacterial dysentery	45,1	42,2	26,24	21,6	-49,0
Shigellosis	31,9	23,3	23,65	19,8	-62,0
Acute intestinal infection	176,6	164,7	146,8	146,7	-17,0
Rotaviral enteritis	10,4	16,4	14,17	17,07	+47,0
Bacterial food poisoning	14,1	13,4	11,50	12,22	-16,0
Brucellosis	24,0	20,1	17,51	14,71	-39,2
Meningococcosis	1,96	1,88	1,95	2,20	+12,0
HIV induced diseases	0,52	0,67	0,87	1,12	+215,0
HIV-carrier	4,65	6,35	11,42	12,74	+270,0
Acute viral hepatitis	79,5	65,6	62,72	76,93	-9,5
Chronic viral hepatitis	3,2	2,8	9,35	11,31	+353,0
Echinococcosis	5,58	4,63	6,57	5,66	+0,9
Acute infections of upper airways	10004,3	8881,1	7829,7	8920,3	-11,0

At that, significant part of efforts aimed on further decrease of infectious morbidity. Therefore, infectious morbidity in the Republic of Kazakhstan changed greatly in the recent years that could be proved by the data from table 1.

First of all it concerns an etiological factor. For example, meningococcal infection is an anthroponomical. The analysis of long-term morbidity of meningococcosis in the Republic of Kazakhstan revealed, that in spite the apparent tendency of stabilization, morbidity rate significantly exceeds the threshold (2,0 per 100000 population).

Further analysis of the table showed that in general during the studied period a stable tendency for decrease of bacterial forms of infectious morbidity and increase of morbidity of viral etiology (viral hepatitis, rotavirus enteritis, HIV-carrier and HIV-caused diseases) is observed. If the decline of bacterial infection could be explained by use of strong antibacterial therapy, increase of viral infection is stimulated by the causes of not medical character. The same is true for hospital infections, when despite the modern scientific knowledge and application of modern scientific technologies, it is impossible to prevent part of them. Morbidity by hospital infections in the republic in general increased up to 538 cases in 2007, rate per 1000 hospitalized population in the republic in general was 0,21.

Therefore, our efforts should be directed at search for “guiltier” as well as for improvement of medical care system by activization of epidemiological surveillance, improvement of material-technical basis of service and optimization of human resources. As for the search for “guiltier”, we think that attention should be payee for the reason pointed out by A. Chizhevsky in his work: “terrestrial echo of sun storms”, - geomagnetic fluctuations caused by changes of solar activity. There exist a data on correlation with tuberculosis and traumatism.

## **SOME ANTHROPOGENIC PROBLEMS OF SOIL ECOLOGY IN REPUBLIC OF KAZAKHSTAN**

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In the last years great attention is prayed for assessment of ecological-geochemical state of certain parts of biosphere, including soil. This was caused by a number of reasons, including increased technogenic pressure to the biosphere in general as well as on it's certain parts. For the assessment to be unbiased a certain conditions should be maintained during its conduction. They connected not only to assessment of the sates of territories, but also to evaluation of observed changes and conducted measures on sanitation of affected territories.

It should be stressed that the main unsolved problems in the field of anthropogenic contamination of the territories of populated areas are: absence of a system of separate collection, removal and processing of waste; presence of an unapproved dumps on the territory of populated areas, contaminating a soil, underground water, atmospheric air and serving as a place of massive concentration of rodents and rats; poor material-technical basis of the objects of housing and communal service; unsatisfactory utilization of medical and biological waste; inefficiently organized removal of domestic waste from the territory of private households, especially in rural places; inadequate maintenance of grounds for hard domestic waste.

Obviously that anthropogenic activity became to cause greater ecological-geochemical changes, the consequences of which become to affect population health and life (for example, various allegros). There still was not given an economic evaluation of the given process, which probably could help to solve a problem.

## **BIOETHICS IN THE REPRODUCTIVE MEDICINE**

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Bioethics – is an interdisciplinary science, facilitating detection and solution of various problems, which are born by the progress of biomedical science and practice. A number of the most frequently discussed topics of the modern bioethics include the questions related to birth of a man. Application of new subsidiary reproductive technologies (SRT) is connected with many religious, philosophic, legal and moral aspects, most of which has no single solution. Besides the treatment of many forms of male and female infertility, SRT are used for solution of problems of fundamental biology and medicine. Among the clinicians, researches and in broad society the attitude towards the use of SRT is ambiguous. Even in the countries where the activity of specialists and organizations on SRT is regulated normatively and legally, the use of the latter causes extremely contradictory assessments. In the countries which absence of any normative acts on SRT application (e.g. in CIS), not only the researches but the users of SRT also are not secured from conflict situations.

### **What is SRT today?**

- n Intrauterine insemination by husband’s sperm, sperm of donor.
- n Classic version of IVF (In Vitro Fertilization)
- n ICSI, IMSI, TESA, MESA, PESA methods (in hard forms of male infertility)
- n Oocyte donating program (Almost 70 % of women referred to IVF need this program!!!)
- n Embryo donation program
- n Program of substitute maternity
- n Preimplantation genetic diagnosis (PGD)

### **Conclusions:**

- n The more intensive is the use of scientific technologies in practical medicine, more responsible and comprehensive should be independent expertise, which regulating their application.
- n It is necessary to increase a population and specialist’s awareness and broad discussion of these problems in society, creation of a corresponding legal base.
- n Regulation of the activities of related organizations, which use biomedical technologies, should be realized through the system of ethical committees. These committees should include specialists of various professions, who are competent to solve such problems (physicians, embryologists, genetics, lawyers, representatives of governmental organs, and international organizations).

## **EPIDEMIOLOGY AND ECONOMICAL EFFECTIVENESS OF PREVENTION OF PARENTERAL HEPATITIS B AND C**

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**Background:** Viral hepatitis B and C are anthroponoses with infection through injured skin and mucous membranes are widely spread and one of leading infections for human population. They are characterized severe clinical picture and one of the causes of chronic hepatitis, cirrhosis, and cancer.

**The aim** of our study was evaluation of effectiveness of immune prevention of viral hepatitis B among children in the Republic of Kazakhstan.

**Materials and methods.** The base of our research was formed by analysis of data on prevalence of viral hepatitis B among children in the Republic of Kazakhstan before vaccination and during vaccination. The research program included frequency analysis of hepatitis B and C prevalence among children during 10 years from 1998 to 2007, coverage of children by immunization against viral hepatitis B.

**Results and Discussion.** Our results demonstrated reduction of incidence of viral hepatitis.

Before vaccination (1997) incidence was 26.2 per 100 000 of population. After 10 years on the background of vaccination incidence was sufficiently reduced to 0.49 per 100,000 in 2007.

The coverage by vaccination against hepatitis B after 2007 is: VHB-1 at the maternal clinic - 97 %, VHB-1 at the catchment area – 107%, VHB – 102%, VHB-3 -100%

**Prevention:** One of the main preventive measures is prevention of infection during transfusion and parenteral manipulations. One of the perspective methods is autotransfusion.

Non-specific prevention of parenteral infection is achieved via usage of disposal instruments during invasive manipulations, careful sterilization of instruments, and strict control on revealing of virus in blood of donors. Prevention of sexual transmission is avoiding of casual sexual contacts and usage of barrier contraception. Prevention of professional infection is in following to universal precautions, especially in blood, surgery departments and laboratories, where specialists have contacts with blood (usage of gloves).

Viral hepatitis B has many ways of infection therefore one of the effective methods of prevention is vaccination. That is the only way to prevent hepatitis B among children. Vaccination against hepatitis B was included to the national calendar of preventive vaccination.

Mass vaccination is safe and very effective mean to control and prevent hepatitis B, and its effectiveness after vaccination is more than 95%.

## **CHILD MORTALITY DUE TO INJURIES AND VIOLENCE IN ALMATY CITY**

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One of the main public health issues, which is dangerous for life and health of child, is injury. In the Republic of Kazakhstan injuries became the leading cause of mortality and disability among children. The level of mortality in 0-14 age group in 2003 was 180.0 per 100,000 of relevant population, which is on 20% higher than in countries of Central and Eastern European countries, and in 3 times exceed average indicator for European Union.

The research in order to study principal causes and circumstances of infant and children's mortality owing to accidents and violence during 2000-2005 has been conducted in Almaty. In former years, the assessment of the external causes of infant and children's mortality was not carried out.

In total 244 deaths owing to accidents and violence in children less than 15 years over six-year period have been registered in Almaty. The data were obtained from the Register of City

Forensic Morgue. For the analysis of the data SPSS 11.0 statistical programs package developed for Windows has been used. The analysis was carried out using eight variables: age, gender, date of receipt (coincided with date of death more often), city district, cause of death, circumstances or external conditions, type of injury, and type of resident habitation. The variable of age has been integrated in two representative groups: younger (0-5 years) and older (6-14 years). For coding the causes of death and circumstances (the external conditions) the International classification of diseases 10<sup>th</sup> revision (classes XIX and XX) was used.

The results of research have shown that 63.1 % of deceased children were boys. The most of deaths (53.3 %) took place in younger age group (under 5 years old). The average age of the decedent was 5.8 years old (CI limited from 5.2 to 6.4 years old at  $p < 0.05$ ). The majority of registered deaths were owing to accidents (92.2 %), and the others (7.8 %) were premeditated. More than half of premeditated deaths have been occurred as a result of suicides (59 %), other cases - as a result of murders (41 %). Among girls the risk to become a victim of murder has exceeded similar risk among boys 6 times.

In the younger age group the percent of boys was 54.6 %, and in older age group – almost three fourth (72.8 %). Asphyxia became the leading cause of death in children under 5 years old, and for children aged of 6-14 – craniocerebral injury. The most of asphyxia and poisonings cases took place in winter time while the peak of craniocerebral injuries fell on autumn period.

The study of external conditions and circumstances has shown that the leading cause of children's deaths became vehicle accidents (33.3 %), followed by fallings (17.2 %), drowning (10.7 %), asphyxia and carbon monoxide poisonings (10.6 %), combustions (6.0 %), suicides (4.6 %), murders (3.2 %), natural forces (2.3%), and iatrogenic circumstances (0.5%).

The most part of younger age group children have ceased as a consequence of fallings, and majority of older age group decedents were pedestrians. A half of children had resided at private houses (while people with the small income live in private houses more often), one third of them – in apartments, and 17.4 % - in hostels. There were no certain seasonality in children and infant mortality owing to accidents and violence, but still the most of deaths had occurred in winter time. The pattern has been found that children of younger age group deceased more often in winter, while deaths of older group children had took place in warm seasons.

Furthermore, there an association between the deceased's household types and seasons of deaths was found out. The children who had resided in private houses had fatal injuries in winter more often than those had resided in deluxe apartments got injuries and died more often over warm seasons.

Based on above-mentioned data it could be concluded that traumatism among children is determined by their age and gender characteristics, and it is also the subject of the environmental and socio-economical factors' influence.

## **STATISTICS IN MEDICINE AND HEALTH CARE: MODERN TECHNOLOGIES OF APPLYING NON-PARAMETRICAL METHODS – $c^2$ AND STANDARDS RESIDUAL TESTS**

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Using of statistical analysis methods is very important in the current medicine researches. Results of such studies are base for any decisions in health management, methods of pathology prevention and treatment.

Kazakhstan School of Public Health during long time successfully provides training courses on statistical methods of research analysis in medicine and health care, and also in evidence based medicine. During these courses low level of knowledge and skills on statistical analysis and theory of statistics was found as among health care administrators and practitioners so among researchers working on health problem study. In this regards there is necessary to publish series of articles to demonstrate how to apply main methods of statistical analysis in medicine and health care in this journal.

One of the main extended goals of the statistical analysis in the conducting of research in health is evidence that comparing samples have statistically significant differences by meaning of analyzing index. When researcher defines impact effect of different factors to health or analyses activity of health care services he gets quantitative or qualitative data. In first case there are used parametrical, in the second non-parametrical methods of statistical analysis.

However, correct using of parametrical methods in the studies requires several compulsory standards. Parametrical methods are used for studies with big sample size and big volume of information. At the same time non-parametrical methods could be used with not very big information volume getting in work with small sample sizes. This makes non-parametrical methods more appropriate and attractive accounting that these methods are relatively simple and capability is enough for studies.

Goal of the statistical analysis by non-parametrical methods concludes assessment of difference between actual data and theoretically expected to define level of probability and reliability of these differences, and determine if they are significant and causal. In this article there is described most popular non-parametrical methods -  $\chi^2$  and standards residual tests, presented main point of these criteria, how they could be used on practice in real study cases, and how researchers could use this method by simple functions in MS Excel program.

## **EVALUATION OF POPULATION'S SATISFACTION WITH MEDICAL CARE QUALITY IN THE FRAME OF THE INSTITUTE OF FAMILY MEDICINE BY THE RESULTS OF THE SURVEY OF THE POPULATION OF BATKEN OBLAST**

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**Key words:** CFM, WHO, respondents, family physicians, institute of family medicine

### **Introduction**

The important objective of health care reform being conducted in Kyrgyzstan is fundamental improvement of the quality of medical care for population. Despite the limited financial resources of health care sector, the health care model is created in Kyrgyzstan, which is recognized by the international community, and which keeps the access of the population to medical services covered by Program of governmental guarantees. The main characteristics of the Kyrgyz health care model include reorientation for primary medical care; restructuring of the system of medical services, which should meet the population needs, health care priorities and financial resources; development of the system of Single payer with inculcation of financial mechanisms based on the end result; and decentralization of the management with the increase of management and financial autonomy of health organizations.

By WHO definition one of the important criteria of health care quality is patient's satisfaction. Satisfaction with the quality of medical care – is an integrated index, reflecting the objective status of health care system and its individual perception by the person.

## **Study materials and methods**

The survey of 716 respondents of all ages of the general population was conducted with the aim of questionnaire in 3 CFMs of Batken (in Leilek CFM -334, in Uch-Korgon – 117, in Kadamzhai CFM - 265).

The special questionnaire was developed for data collection which included 31 questions on 4 groups of factors, influencing the quality of medical care: social-professional, medical-organizational, socio-psychological and patients' satisfaction with the quality of health care.

### **Results**

Survey covered sufficiently broad and diverse population stratum, it involved people of various social classes, different gender and age and different health status. 58,7% of respondents were female and 41,3% - men.

Among the respondents the prevailing age group was from 41 to 50 years old (28,4%). Almost the same weight had the age groups from 21 to 30 years old and from 31 to 40 years old – 21,4 and 23,5% respectively. Persons of the age of 51 till 60 years old made up 11,5%, from 61 till 70 years – 7,6%. Among the women the dominant age groups were 31-40 years (23,6%) and 41-50 (28,4%), among men – 41-50 years (21,6%) and 51-60 years old (19,4%).

Housewives had the biggest weight by the social status (36,6%). Workers made up 22,8%, clerks – 14,7%, pensioners – 14,1%, students – 3,9%, “others” - 8%.

The questionnaire was composed in such a way to highlight population's attitudes to their own health, the character of pathology that are faced by family physician, which of them he deals with himself and in which cases he needs a help of the specialists, the patient's attitudes to family physician's work and level of satisfaction by his activity.

The results of respondent's answers analysis show that the main part of the patients in 49,7% of cases visits a doctor in all cases, in 23,7% - only at the most necessary cases, and in 26,6% - see a doctor concerning all cases except easy indisposition. And the younger the age of the patient, the bigger is the weight of those among them who sees a doctor only in the most needed case.

The main reasons of visits to a group of family physicians are diseases or pathological conditions (49% of patients). Another 11% of patients were admitted related to traumas. The weight of the patients who were seeking for prophylactic or dispensary examination was 19% of patients, getting the various sort of certificates and assignments made up 16% among the all respondent's visits to physicians.

The most part of the patients (94,4%) were satisfied by the work of their family physicians, and only 3,8% of respondents - were not. The others were troubled to answer.

The following facts, which were revealed through the survey, are of a special interest: 93,9% of respondents want their families to be treated by the only one physician, 45,4% of respondents consider the activity of a general practitioner to be more effective compared to that of a previous district physician-therapists.

Among the respondents only 30% of a population was agree with copayment of medical services when being hospitalized.

It is worth to stress that the study revealed also the absence of a direct correlation between the patient's satisfaction and the length of his visit to a doctor. The association was determined between the patient's satisfaction by medical care and his level of awareness about a disease. So, the better is a patient informed about his disease (63% of respondents), the higher is the level of his satisfaction with medical care (96% of respondents).

### **Conclusion**

In general, summarizing the results of our research, it could be noted that a family physician turned out to be able to render medical care to the most of the patients, who were seeking care concerning different diseases; applying the methods which were used previously by narrow specialists, he approached the understanding of medical care from the point of view of

family health care, that in general predetermines improvement of the quality of life and longevity of population.

Therefore, transition to primary health care by the principle of family medicine has demonstrated its advantages against district service, which is proved by the survey data. Most part of the patients (94,4%) are satisfied by the work of family physician, 93,9% want their families to be treated by the same physician, and 45,4% consider the activity of family physician to be more effective compared to that of the former district physician-therapist.

## **HEPATITIS B – URGENT HEALTH CARE PROBLEM**

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Viral hepatitis B remains an important problem in health care of many countries of the world. By WHO experts' opinion more than 2 milliards people in the world are infected by HB virus. Each year more than 50 million people are becoming infected with HB for the first time and about 2 million are dying because of the hepatic diseases related to this infection. HB is characterized not only by wide prevalence, high levels of incidence, often severe course, but also by the tendency to development of chronic affections of liver. In about 5-15% of HB patients in spite of the form of infectious process, acute hepatitis is transforming to chronic.

Chronic HB could have predictive unfavorable course and lead to development of cirrhosis and carcinoma in 1/3-1/4 of infected. About 80% of primary malignant diseases of hepatic is related to HB. Mechanism of infecting is haemocontagious. Infecting occurs by natural (sexual, vertical, etc.) and artificial ways.

Retrospective epidemiological analysis of HB morbidity in the Republic of Kazakhstan enabled the determination of several stages of epidemiological process development of this infection, determined by socio-economic transformations in society. During the period from 1990 till 1997 morbidity was 31,7 – 29,72 per 100 thousand population. Since 1997 till 2007 these figures decreased from 29,6 to 5,46 per 100 thousand population. At the analyzed period the main factor, which determined the spread and growth of HB prevalence, was parenteral way of infecting during the conduction of medical manipulations. After the maximum rise of HB morbidity in 1990-1991 (accordingly 31,7 and 31,6 per 100 thousand population) and in the following 5 years (1992-1996) morbidity rates decreased and made up in average 25,7 per 100 thousand population. In 1997-2001 tendency of decreasing morbidity rates began to show, however its level remained quite high (annual average rate was 23,1 per 100 thousand population) and proved the continuous unsatisfactory HB epidemiological situation. For comparison: HB morbidity in 1999 in European Union countries (Austria, Belgium, Italy, Sweden, Great Britain, and others) didn't exceed 3,0 per 100 thousand population.

The characteristic feature of HB epidemic process development from 1990 till 2001 was change of the structure of ways of transmission of the agent. In republic since 2000 steady decline of hepatitis B incidence is observed – due to mass immunization of the population in the frame of National project.

Preventive measures include both specific and nonspecific prophylaxis, aimed on interruption of ways of transmission (correction of behavior, use of disposable instruments, restriction of transfusion of biological fluids, application of effective disinfectants, protected sex). Vaccination is used widely for prophylaxis. In the Republic of Kazakhstan active immunization was begun since 1998.

Hepatitis B is a priority health care problem all over the world that related to high contamination with virus of the population leading to very severe consequences. The only one effective preventive measure of hepatitis B, and also cost-effective, is population immunization.

## **FEATURES OF DIAGNOSIS OF THE TUBERCULOSIS OF EYES**

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### **Background**

The worsening of the epidemiologic situation on tuberculosis is observed currently all over the world. Unfortunately, Kazakhstan has a leading position on tuberculosis morbidity among the CIS countries, despite the tendency of its decrease from 165,1 per 100 000 population in 2002 to 125,5 in 2008.

Unfavorable prognosis is expected for extrapulmonary tuberculosis also, with its significant growth in the next 5-10 years, even under the positive epidemiological situation on tuberculosis of the lungs. Tuberculosis of the visual organ, being one of the forms of extrapulmonary tuberculosis, is a severe pathology of the visual organ and in the structure of extrapulmonary tuberculosis it occupies the fifth place among the adults, and third place among the children and adolescents.

The aim of this research is to study the weight of phthisis eye-lesions in the general structure of tuberculosis morbidity for the period 1997-2006 in the Republic of Kazakhstan and specific features of diagnosis of the given pathology.

### **Materials and methods:**

The materials of the study are presented by the histories of disease of 258 patients with tuberculosis of eyes and suspicion on it, which were treated in NCT at the given period.

The diagnosis of tuberculosis of the eyes was made based on complex of criteria: anamnesis, clinical performance, X-ray examination data (if necessary- tomography through root of lung), results of tuberculin tests, laboratory tests, test-therapy with tuberculin statics.

### **Results:**

For the period under the study at the stationary of NCT there were treated 17 320 patients with tuberculosis of different locations, at that in 1997 there were 1381 patient, out of them with suspicion on ophthalmic tuberculosis there were – 27 patients (1,9%), in 1998 – 1642, out of them – 35 (2,1%), in 1999 – 1504, of them -32 (2,1%), in 2000 - 1641 patients, of them– 15 (0,91%) patients; in 2001 – 1786, of them 29 (1,62%), in 2002 – 1858, of them 29 (1,56%), in 2003 – 2105, of them 26 (1,23%), in 2004 – 1839, of them 23 (1,25%), in 2005 – 1863, of them 21 (1,12%), in 2006 – 1701, of them 21 (1,23%).

Final diagnosis was verified in 223 patients (86,4%).

### **Conclusions:**

1. For the period 1997- 2006 at the NCT there were 17320 patients under the treatment with various forms of tuberculosis. Out of them there were 223 patients with verified diagnosis of eye tuberculosis, which made up 1,3%.
2. Ophthalmic tuberculosis affects the young employable part of the population, mostly women.
3. In the diagnosis of the ophthalmic tuberculosis the following criteria are important: anamnesis, clinical performance, X-ray examination, tuberculidiagnostic, and laboratory tests data.

4. More than in a half of the cases the absence of radiographic appearance of active or past history of extraocular tuberculosis is observed.
5. Immunologic blood tests can serve only as an additional method in verification of visual organ tuberculosis.

## **LOGISTIC IN OPERATIVE GYNECOLOGY**

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- 1. Introduction. Review of surgery activity, types of surgeries in operative gynecology.**
- 2. Methodology of pre-surgery preparation.**
- 3. Hospitalization of patient**
- 4. Surgery.**
- 5. Treatment at the hospital.**
- 6. Out-patient treatment and observation during post-surgery period.**
- 7. Economical effect of intensive management of patients in compare with standart management**
- 8. Conclusion**

In operative gynecology all kinds of operative interventions are subdivided on endoscopic, laparotomy and vaginal.

Progress in the field of operative gynecology basically is provided with use new energy (lasers, ultrasound, and the electric power) and less invasive access (laparoscopy, hysteroscopy and etc.). Now laparoscopy surgery has received the world calling. In the advanced countries the amount of the operative interventions executed by endoscopic by access, promptly grows. In the large gynecologic centers abroad and in Russia the percent of performance of laparoscopy operations from volume of all abdominal interventions makes 70-80 %.

In the modern world, when the level of knowledge and erudition of patients is very high (due to modern technologies of reception of the information), it is necessary to become the ally of the patient, i.e. in common to solve and be responsible for the decision of his (her) problem. For absolutely fair and confidential dialogue assignment of unnecessary inspections, the medical products, unnecessary "bed-days" is inadmissible. Having approved on practice intensive conducting patients in out-patient conditions and in a hospital within 2 years, and also absence of complications in the postoperative period, is possible to draw a conclusion, that such method is mutually advantageous for patients and clinic. Having all some numbers in a hospital (from 4 to 6), the quantity of operations and the treated patients corresponds to work of branch of operative gynecology about 30-40 beds. But due to a high revolution of bed (absence of preoperative bed-day, a minimum quantity of bed-days) is achieved high economic benefit for clinic. It is absolutely comprehensible to patients both from the economic point of view, and in the psychological plan. I.e., thus, in conditions of market economy such cooperation of patients and clinics more meets to modern requirements, than in conditions of standard gynecologic branches of operative gynecology.

## LEGAL ASPECTS OF THE MEDICAL RIGHT

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The purpose of article to give the information for reflection for people who during the different vital periods were patients or will be them and that the medicine is an art, philosophy. The sacrament of doctoring, and the main thing of healing since ancient times was the supreme achievement of mankind, though also a riddle.

Medical mistake - a mistake of the doctor in professional work, owing to honest mistake at absence of negligence, ignorance based on unusual, non-typical current of disease. The leader in definition of a medical mistake is conscientiousness of actions of the doctor, i.e. performance by the doctor of all necessary actions for diagnostics and treatments of the concrete patient.

We can only conclude that in our state a doctor is not protected by the law and a patient is always right, since there is a concept fixed by the law - as injury to health, but there is no concept of iatrogenic complications and subjective desire of the patient to accept responsibility for the life and health.

Iatrogenic diseases are all diseases and the pathological processes arising under influence of medical influences, carried out with the preventive, diagnostic or medical purposes. Iatrogenic diseases can be caused both erroneous and ungrounded medical influences, and correct, valid.

The term " a medical mistake " is used only in the medical literature and practice. In the working Kazakhstan legislation this term is absent. It is not considered and the circumstance excluding the legal responsibility, contrary to desirable by many doctors.

Therefore for the greater confidence and rest of the further life first of all it is necessary for the doctor:

1. Bona fide to record all carried out procedures and their results - for the proof of that s (he) has carried out high-grade diagnostics;
2. Record all manipulations, assignments, intermediate surveys and strictly to observe standards of medical aid - for the proof of that s (he) has correctly and in due time executed all stages of treatment and necessary procedures;
3. Record informing of the patient - the proof of carrying out of necessary explanations and discussions of treatment from the moment of his(her) manipulation to the doctor and before recommendations after the carried out treatment.

In summary it is necessary to tell that questions of legal regulation in health care are on a regular basis discussed in the special legal and medical literature. However, many it has been written scientific articles on this theme, final judgment on any question of the medical right is taken out by judiciary RK. The regional court of the general jurisdiction has the right to cross out any scientific views of the most authoritative scientists in this sphere, applying norms of the current legislation for the sanction of a concrete affair.

Anyway, this problem, as well as at any another, has underside. If in case of medical failure the responsibility to assign to medical workers, we could not be treated. In any case, how many we argued on all it, deciding and basic value in all medical activity, the doctor with the internal attitude to the chosen trade, professionalism and comprehension of all responsibility laying on him (her), both morally - ethical, and legal has.

## **MEDICAL-SOCIAL ASPECTS OF REPRODUCTIVE HEALTH OF ADOLESCENTS (LITERATURE REVIEW)**

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**Key words:** reproductive health of adolescents, problem of reproductive health protection, reproductive behavior.

Reproductive health of adolescents in medical-social aspect is one of the important health care problems. Its urgency is validated by the figures of qualitative and quantitative reproduction of population, declining characteristics of mother and child health. Frequency of somatic pathology in 75-86% of girls; in 18% - gynecological pathology, restricting their fertility and frequency of what increased in 3 times, decreasing reproductive potential of future women. About 60% of diseases in adolescents of the age of 14-17 years old could serve as a real threat for their infertility. The problem of pregnancy (abortions, deliveries), contraception and sexually transmitted infections are becoming quite prevalent among the adolescents.

Reproductive health should include the terms of harmony and balance of the physical, sexual, psycho-sexual, psycho-social development, somatic and mental health of adolescent, and not only the absence of gynecological diseases and sexually transmitted infections. Inferiority of reproductive system leads to a number of serious problems, both of medical and social nature, such as infertility, miscarriages, growth of perinatal and maternal pathology.

Young people constitute a special social group, united by defined age, behavioral features and specific living and educational conditions. Reproductive directives – are the most important components of youth's ideology, constitution of which at the current period of significant social and economical transformations in the society, is extremely hard and discordant. This related, first of all, to serious reevaluation of normative believes about life values and priorities, social norms are decreasing and health protection traditions are depreciated, including reproductive health also.

Thus, juvenile age, by expert's opinion, has two extremely important periods: pubescence and a period of social maturing. It was suggested by WHO expert's committee in 1977 to consider 10-19 years old persons as adolescents. This age group makes up 33% of the population of Earth. WHO specialists divide juvenile age to early (10-14 years) and late (15-19 years). Taking into consideration the above mentioned information, the important direction in the work of educational and health care organizations of different levels in the field of healthy lifestyles development in young people is realization of complex preparation of young girls and youth to marriage, and training of responsibility for their future children's fate and health.

## **PROBLEMS OF TELECOMMUNICATIONS IN HEALTH CARE**

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In the last decade of XX century informational-communicative technologies became one of the most important factors affecting the development of society. Their revolutionary influence

deals with governmental structures and public institutes, economic and social fields, science and education, culture and people's life styles.

Development of adequate not expensive telecommunication infrastructures can help to provide equal access to medical care for rich and poor. Of course, there are a lot of problems on this: protection of information, international standards, ethical, legal aspects, educational questions. However, it could be stated, that informational revolution will transform radically the technology of medical services.

Currently, there more that 250 projects are known in the world, related to informational technologies in health care, which are divided to clinical (the most part of them), educational, informational and analytical by their character. By geographical spread the projects are divided to: local (within the one organization, overall 27%), regional (40%), national (16%) and international (17%). Many of the projects are multipurpose, in half of cases (48%) they related to distance education and training. In every forth project new channels of information transmission are used for management and administration needs. In 23% telemedicine is used for medical service of the population of rural and remote areas.

Telemedicine is one of the highly effective technologies able to make positive complex effect on clinical, educational, and scientific and management aspects of health care system, and possesses high medical, social and economic potential. Currently, under the term of "telemedicine" a scientific-applied medical dimension is understood, based on the use of informational, computing, telecommunication technologies for distant medical care, and also for solving educational, management, and scientific, analytical, communicational objectives in the interests of patients, health workers, and health care management organizations

## **CHARACTERISTIC FEATURES OF FORMATION AND REALIZATION OF REPRODUCTIVE FUNCTION IN ADOLESCENT GIRLS (LITERATURE REVIEW)**

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The data on reproductive maturing of children and adolescents are in the field of interests of pediatrics, hygiene, pedagogies and sports medicine from theoretical as well as from practical points of view. The decline of the health status of growing up generation of women being observed in the last decades proves the necessity to study the growth and development of modern girls, and to accept adequate measures of a curative-prophylactic and health promoting character.

By WHO definition, "sexual health – is combination of physical, emotional, intellectual and social aspects of a sexual life, which positively enrich a person, contribute to mutual understanding and love". A general level of sexual culture in a society determine such an important social indexes as dynamics of unplanned pregnancies, abortions, violations, sexually transmitted infections.

The sexual revolution will dramatically influence the health and the future of the world population nowadays more than ever before. Modern young women have a higher level of education, but not still – high level of a health culture. The main causes of death in the age group of 15–19 years old women in the less developed countries are still remain the complications of causes related to pregnancy, delivery and unsafe abortions. More over, young people from 15 to 24 years old have the highest levels of the STIs, including HIV/AIDS, and adolescent girls have a twice greater chance to be infected compared to youth.

Increase of the general morbidity in young people is closely related not only to ecological, biological, but also to social factors. Currently, a problem of drug addiction is very urgent among adolescents. Because of the increase of a gynecologic pathology in pubescent period and high morbidity of newborns and adolescents in recent time big attention is attached to child and adolescent gynecology.

Under the current socio-economic conditions reproductive status of the population of republic remains one of most important medical-social problems. In the current situation there was matured a need to develop a complex of measures on reproductive health protection of a population by working out a methods of evaluation and prediction of reproductive function disorders with the aim of improvement of diagnostics, treatment and prevention. Special attention should be attached for reproductive health protection of adolescents that will determine population reproduction and health promotion of the nearest generations.

## **MENTAL HEALTH CARE IN KAZAKHSTAN: PRESENT AND FUTURE. FEATURES OF MENTAL HEALTH SERVICES IN ALMATY.**

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Mental health care is an integral part of any state's health system, and has significant effect on economic and social state of a country, since mental disorders are associated with considerable disease burden, economic and social losses borne by individuals, families and a state. According to WHO vision, mental health policy should include advocacy, promotion, prevention, treatment and rehabilitation. Kazakhstan mental health policy was formulated in 1997 in Mental Health Act "Mental health care and rights of patients". The components of this policy are advocacy, promotion, prevention, treatment and rehabilitation of mental disorders, social care, and promotion of patients' rights in this field. National mental health program is in the process of development, this program includes collaboration and strengthening of mental health access at primary health care level.

Kazakhstan mental health system did not considerably change for the five years from 2003 to 2007. It still consists of mental health centers, mental health hospitals, mental health consulting rooms in primary health care net, specialized psychiatry emergency teams, etc. There are also day hospitals and workshops for treatment and social rehabilitation.

The number of mental health facilities did not change: there are still 35 mental health organizations including 14 hospitals, 21 centers and 2 state organizations – State Research Center for Psychiatry Psychotherapy and Narcology in Almaty, which provides tertiary care, and State Mental Health Forensic Hospital in Almaty region. There is one mental health center in Almaty. There are also mental health departments in general hospitals (8 departments in 2007), neurosis in-patient departments (12 – in 2007), 180 psychiatry consulting rooms (1 – in Almaty) and 32 psychotherapy consulting rooms in the country (including 4 in Almaty).

There are 0.6 psychiatrists per 10 thousand population on average in Kazakhstan. This indicator is a little lower in Almaty and amounts to 0.54 psychiatrists per 10 thousand population. There are 0.05 psychotherapists per 10 thousand population in Kazakhstan on average, the number of psychotherapists is 1.6 times greater in Almaty – 0.08 per 10 thousand population. But the number of mental health specialists does not change significantly over this time period. At the same time the incidence of mental disorders tends to decrease both in Kazakhstan and in Almaty, with the incidence in Almaty being 1.14 times as high as in the whole country. The analysis of prevalence of mental disorders showed that these indicators are slightly decreasing from 2003 to 2007, with prevalence in Almaty being on average 1.4 times as low as in Kazakhstan. Primary disability due to mental disorders also tends to decrease in

Kazakhstan as well as in Almaty with the difference between the city and the country becoming less.

There are now attempts being made to elaborate and introduce mental health program that would emphasize prevention and early detection of mental disorders through integrating mental health into primary health care settings.

## **QUALITY OF LIFE ASSESSMENT IN ALMATY AGEING POPULATION**

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Demographical changes happen during last ten years in all countries in the world including Kazakhstan. This is characterized by quick growing number of ageing people. In the current public health there is very popular and usage definition “quality of life” that means description of physical, mental, emotional and social condition of patient due to their own perception. For ageing people this firstly could be accessibility to medico-social care that provided at medical and social services by physicians, nurses, social workers, psychologists. This index also allows assessing how person feels himself in different roles at the certain life stage, give evaluation of his own health, and could adapt to environmental stress factors with smallest health impacts.

This is commonly known that level of life determine health condition. Health status reflects to level of life and increasing of level of life increases health status. All these factors determine quality of life. And quality of life also depends on other factors and one of them is age.

Objective of this study was assessment of quality of life of Almaty ageing people due to 8 criteria (scales) of MOS SF-36 survey (J.Ware, 1998) – physical functioning, role limitations due to physical health, role limitations due to emotional problems, energy/fatigue, emotional well-being, social functioning, pain, general health.

Thus, conducted survey demonstrate that quality of life is a complex index illustrating life condition and allowing broad view of human capacity in different stage of their life and activity. Quality of life of ageing people does not exceed 67% by assessed scales. In age aspect quality of life of ageing people is poor than their peer of younger age.

## **REGULATORY BASE OF THE “ALMATY EMERGENCY SERVICE” HEALTH CENTER**

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“Almaty emergency service” Health Center was established in early 2005. Legislation on which the center is based had been elaborated for 3 years. “Order of the Health Center” and “Specialists job descriptions” were the main documents of regulatory base.

The Order of Health Center was ratified by the Mayor (Akim), job descriptions were ratified by the director of the “Emergency Service”.

The Health center is a part of “Almaty Emergency Service” State Enterprise (further “Enterprise”).

Planning, decision-making and all functioning of the center complies with the appointments and instructions of a Director of the Enterprise and Kazakhstan existing legislation. The Enterprise provides the Health center with everything necessary for effective work, including equipment, medications and pharmaceuticals. The center is independent in carrying out its immediate duties.

The Center is managed by the Director of the Enterprise and the director of the Health Center.

Enterprise Director’s terms of reference provide for:

- Adopting and amending the Standing order;
- Defining main directions of activity of the health center;
- Appointing to or dismissing from a position of a director of the health center;
- Allocating net profit;
- Approving the list of members of staff in the health center.

Director of the Health center manages health center and reports to a Director of the Enterprise. Labor relations between the Enterprise and a director of the Health center are regulated by labor contract.

Director of the Health center can be dismissed in cases provided in the contract and labor legislation in the Republic of Kazakhstan.

Staff of the Health center includes Kazakhstan citizens and citizens of other states, who signed individual labor contract with it. Relations between the employees of the center are regulated by Kazakhstan labor legislation and regulatory documents of the Enterprise. Social welfare, social and health insurance of the health center staff is regulated by the Kazakhstan legislation.