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ABOUT PERFECTION OF THE PLANNING, MONITORING AND FINANCING OF THE SCIENTIFIC RESEARCH IN THE HEALTHCARE IN KAZAKHSTAN: ON THE WAY TO THE REFORM

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Planning of the scientific research

Since 1999 financing of the scientific research in the healthcare field is performed on the contest basis on the programmed-goal principle.

Formation of the government contractual work takes place on the basis of the suggestions from the scientific organizations. The latter in turn are guided by their capacities (manpower, material-technical basis). Scientific-technical programs (STP) in the majority of cases have stereotyped character and every triennial period organization carry out unilateral research of the same type with the minimal effect of novelty.

The quantity of STPs performed by the dependent scientific organizations during last years is constantly increasing. In the 2000 there were 22 topics, in the 2001 – 22, since 2003 their number grows: 27, in the 2004 – 32. In the 2005 33 scientific programs are being performed, from which 20 will be completed in the current year.

In order to change the situation it is necessary to shift to the real government contractual work.

Suggested solution

- Formation by the Ministry of health of the RoK of the government contractual work for the performance of the applied scientific research on the priority strategic directions
- Choice of the performers on the contest basis

Financing of the science

Every year the volume of the financial means, allowed according to republic budget program 009 “Applied scientific research in the healthcare”.

In 1999 the financing made up – 84,8 millions of tenge

The level of the material-technical equipping of the scientific organizations significantly improved during last years. The growth of the financing for these goals is undoubted.

Nonetheless, the material-technical basis of the scientific organizations stays low, the share of the salary fund doesn't decrease and makes up 75% in average, which essentially evidences about the maintenance of the scientific subdivisions of the SRIs and SCs.

The solution of the problem is transition from the budget of surviving to the budget of development.

Suggested solutions:

- Financing of the scientific-technical programs
- Cut of the expenses on salary (up to 50%), increase of the financing on other goals (travel allowance into regions and for the participation in the international forums, purchase of the equipment, reagents, vivarium, Internet, publications, etc.)
- Increase of the financing of the material-technical equipment
- Search for grants, off-budget sources of the financing
- Formation of the incentives for the scientific manpower (differentiated remuneration, link with the practice and education)

Manpower policy

Nowadays for the performing research on the qualitatively new level it is necessary to perform training of the scientific research in the centers of the former Soviet countries and

foreign countries, to invite specialists from the foreign centers to train scientific personnel locally. The work in this direction is already started. In order to realize the innovation policy of Kazakhstan it is necessary to solve the problem of the preparation of the manpower potential, which will perform the commercialization of the results of the scientific research in the healthcare system.

Therefore, from the stagnant model of the development of the manpower resources it is necessary to move to the policy of their planned and systematic development.

Suggested solutions:

- Training and re-training of the scientific personnel abroad
- Training of the managers of the scientific research, that are able to evaluate commercial capacity of the scientific research
- Creation of a special program of the training of the scientific personnel starting from the undergraduate education

Management and organization of the medical and pharmaceutical science

Nowadays the organizational-legal form of the majority of the SRIs and SCs is the form of Republic State Public Enterprise, which often limits the development of the scientific activity. There is a rigid structure of the scientific subdivisions of the SRIs and SCs. At present time the low effectiveness, irrelevancy of the domestic works for the practical healthcare is registered, absence of the recognition at the international level. This model of the management and organization of the medical science can be defined as centralized.

The main point in this issue – to move to the decentralized model of management.

Suggested solutions:

- Change of the status of the scientific organizations in order to provide more freedom of actions
- Creation of the temporary creative scientific collectives, that envision attraction of the highly qualified specialists including those from the regions
- Introduction of the new criteria of the evaluation of the performance of the programs

Unity of the science, education and practical healthcare

The most important task is reconstruction of the triune of the science, education and practice in the healthcare.

Suggested solutions:

- SRI and SC – coordinators of the profile services
- Providing of the coordinative, methodical and educational activity
- Creation in the profile SRIs and SCs the educational structures (faculties) with the attraction of the highly-qualified specialists, leading specialists to the educational activity
- Strengthening of the methodical and educational activity
- Work out of the conception of the postgraduate education and involvement of the SRIs and SCs into the educational process

Optimization of the networks and structure

The analysis shows that there is an imbalance in the geographical, regional allocation of the republican centers and institutes.

Suggested solutions

Liquidation of the imbalance, rational situation of the centers:

- Opening of the new centers
- Formation of the new regional centers on the basis: north, east, west, south

Integration into international space

With the transition to the market economy the integration of the science into world community should strengthen. Domestic medical and pharmaceutical science should be more open for the international scientific community. Nowadays there is a low activity of the Kazakhstani scientists in the international projects, in the performance of the joint scientific-technical activity with the partners from the foreign countries.

The task is a transition from the closed model of the development to the integration into the international scientific space.

Suggested solutions:

- Active participation in the international conferences, encourage and support of the scientists, collectives, increase of the financing of the business trips for the participation in the international forums, for internet, publications in the prestigious scientific issues
- Implementation of the new criteria for the evaluation of the performance of the programs

NEW PUBLIC HEALTH IN KAZAKHSTAN

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The formation of the concept for “health” and its evolution utilized knowledge about various mechanisms, laws and regulations. The initial health begins with primitives’ hygienic skills. Also, in the known works of ancient thinkers, philosophers, physicians there are concepts shown about health, disease, lifestyle, sources of health preservation and promotion.

In spite of prevalence of idealistic, theoretical and scholastic views, prominent thinkers of an ancient world and in the Middle Ages already approached to understanding of that not only natural and biological (individual) factors, but conditions of public life influences onto population health too. The necessity of health preservation requires organizational medical actions.

In history of humanity social actions on health care began to be provided with the advent of state. They altered depending on change of social-economical formations, changing of production methods and productive relations, and political system.

Different degree of development of public health, variety of the forms and approaches, differences in social order, concrete historical terms led to huge discord and vagueness in content, scope and objectives of science of public health.

Science of public health in different countries occurred under various names: social hygiene, social medicine, medical sociology, public health and healthcare, preventive medicine, social anthropology and others; although described by various definitions, but it is similar by content.

Processes of international integration, including necessity of standardization and unification of main conceptions, involved the specialists of healthcare into discussion of name of discipline “public health”, its subject, issues, and its methods.

Considering defined identity of socially determined characteristics of health and healthcare studied by current ways, and not probing deeper into conceptual, methodological and methodical nuances many authors use integral conception – public health.

Despite abundance of viewpoints, most of the specialists incline to view that subject of public health is studying of influence of social conditions of life on health and medical care of population.

From these points public health is integral, “joint”, theoretical-applied science which studies regularities of influence of social and economical factors on health of population, and substantiates a system of state, public and medical actions on health care of society.

Conceptual principles of discipline didn't get sufficient distinctness yet, but it should be accepted that methodological base of public health is system approach for defining and studying the public health.

The history of public health in Kazakhstan reflects the main stages of development of state socialism in former Soviet Union (USSR).

From the moment of establishment of Soviet power the main objective of state healthcare was theoretical and practical development of preventive principles of healthcare. Also in the center of attention was providing of population with free medical care.

At Second World War time, all of the attention was concentrated on questions of supplying of war front with medical care and deployment of base hospitals.

At the post-war time, the objectives were related to reconstruction of national economy and liquidation of sanitarian consequences.

In further years scientific practical interests were met the ideology of socialistic building, among of which the more scaled actions were actions on general clinical examination of population.

The 20th century had challenges: high infectious morbidity, high need in surgical care in consequence of practically ceaseless large-scale and local wars, high maternal and infant mortality. In these times, one may say that the public health needs were met in the economically developed countries including Kazakhstan. Hence, the extremely dangerous infections were eliminated, prevalence of other infectious diseases was reduced, population mortality was decreased, and the average life expectancy was increased.

Concepts about place and role of healthcare in the social production needs further development for public health, the research in this area must address theoretical issues. Although the theoretical arsenal of public health was seriously enriched by research in the past, where such key conceptions of public health science as “disease” and “health” (individual and public), “adaptation”, “prevention” and others got a new interpretation on modern methodological level, yet more research is needed

At the WHO/UNICEF International conference in Almaty (1978) model of socialistic healthcare (Semashko model) realized the world recognition.

After the acquisition of sovereignty and forming of the market relations public health in Kazakhstan underwent a number of cardinal changes.

By convention development of healthcare system of sovereign Kazakhstan might be divided into next stages:

1991-1994 – preservation of soviet healthcare model based on principles of state socialism. That period tough economical policy was realizing; it was directed to limitation of budget financing of sector, optimization of health system including reduction of outpatient and inpatient facilities, workplaces.

1995-1997 – transition from budget command-administrative system to the budget-insurance medicine, liberalization of pharmaceutical sector, forming of nongovernmental healthcare sector.

From 1998 – return to consolidated budget, program financing of healthcare with special purpose, state order on competitive base.

Hence, for rather short historical period in the Kazakhstan health system, all known models were tried, and as a result many lessons were learned.

Choosing future optimal way of public health development Kazakhstan must consider international trends, historical analysis of which, and also own experience warn about danger of adherence to only one approach in the activity, even if it is prevalent liberal or state-monopoly models of healthcare.

At the current time, there are some outlined trends of the development of health systems in

the economically developed countries.

In the post socialistic countries, for which long time tough state health system was typical, now governmental medical insurance is being implemented, and these are quiet often combining with private payment of some kinds of medical services.

On the other hand, those countries where medical insurance system has been in place, they think that it is worthwhile to enhance governmental influence through the financing of health system. At this time, as a trend, a gradual system of population health care regulated by government is forming, on its base there is medical care supported by taxes. The medical services are cost free for taxpayers, thus provides general coverage of population, and meets the provision of obligatory medical services.

During the past few years, these processes in the countries with mainly volunteer system of medical insurance, in spite of improvement of control in healthcare sector from the government, the elements of obligatory medical insurance are being implemented. The striking representative of such countries includes USA, where decentralized system of private insurance is preserved and governmental regulation practically low. Program of reconstruction of American healthcare and its radical modernization suggested now are directed to creation insurance market controlling by government, to vital dissemination of volunteer and obligatory medical insurance to all groups of population for providing the accessibility of medical care. However in spite of relatively successful indices of public health in USA, in other economically developed countries (Japan, Finland, Sweden, Switzerland, etc.) where financial expenditures for health system are significantly less, these indices are vitally higher. It confirms changes in the indices of public health are conditioned by different other factors rather than by functioning of health system and expenses for it; study of these factors will let to determine priorities in health care of population.

We should recognize that indices of public health must not be used as characteristics of advantages of one or another health system. Probably it is objective and rather clear reflection of deep processes existing at current territory and forming the population health.

Today we may assert with certainty all countries, even those, where state-political systems were full antipodes, move to meet each other in search of effective model of healthcare.

If in many economically developed countries trend of deviation from private entrepreneurial, liberal system of financing and health administration to improvement of role of the governmental regulation and socialization of healthcare was outlined, then system of citizens' health care in post socialistic countries reforms towards refuse from state-monopolistic system to decentralization, denationalization, and privatization.

Modern stage of development of public health is characterized by complex program-purposeful approach to solving the healthcare problems, wide mastering of system approach methodology, and by transition to practice of organizational experiments. By Decree of President of the Republic of Kazakhstan from 13th September 2004, there was approved the State program of reforming and development of health care of the Republic of Kazakhstan for 2005-2010.

World Health Organization (1995) asserts that new public health is organized efforts directed to development of health policy, where health promotion, diseases prevention, and support of social justice integrate in general context of stable development.

New model of healthcare in XXI century must meet challenges of its own time, among them are lifestyle related diseases (first of all, diseases of blood circulation, malignant neoplasm's, pulmonary diseases, traumas and poisonings); diseases related to risk behavior of human (STDs, HIV/AIDS, drugs using); diseases related to environment; diseases related to migration, social conflicts; and diseases unknown before.

In modern conditions content of discipline requires vital reconsideration and filling, including development of legislative bases of healthcare, study of trends of public health in the changed socio-economical conditions, economical substantiation of health organizations' activity, quality management of medical care, etc.

The main parts of the discipline are: history of medicine and healthcare, theories of medicine and healthcare, health policy, health legislation, medical sociology, health and

healthcare statistics, epidemiology, health promotion, forming of healthy lifestyle, organization of system and health services, health management, health economy, healthcare financing, healthcare planning, social and medical insurance, social marketing, ecology, medical education, intersectoral collaboration, informatics and others.

Undoubtedly, only future will show how successful will be the reorganization of native healthcare. The same time public health of Kazakhstan, in spite of not completely surmounted consequences of deep system crisis, proved its own justifiability again by liquidation of poliomyelitis. Now trends to reduction of TB morbidity and mortality are outlined.

THE MAIN DIRECTIONS OF THE STRATEGY AND TACTICS OF THE DEVELOPMENT OF THE HEALTHCARE SYSTEM

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Republic of Kazakhstan builds a state with the socially oriented economy, which provides for the citizens the main social guarantees, one of which is their health protection.

In the modern conditions the problem of access to the medical care for the population is especially acute. Whether our state can guarantee that minimal volume of the medical care to the population which could influence positively the main indicators of the health and at the same time to satisfy the expectation of citizens? We believe that because of the economy's rise this problem can be solved.

A backbone factor of the development of the healthcare field is its optimal financing. In the economically developed countries while the volume of the financing of healthcare is more than 5% of GDP the health indicators of the population are significantly better than in the countries where the healthcare costs are lower.

While there is a significant deficit of the financing of the healthcare system, and really existing payments for the health services by the patients, while there is an absence of the law about the guaranteed by state volume of free-of charge medical care, while there is a formation among the population a mentality of the significance and growth of the costs of medical services the need to legalize already taking place social relations, namely, introduction of the co-payments for the medical services by their consumers, arises.

It's quite another matter, how to perform it. Several ways could be offered: first of all, to charge patients the expenses of all utilities; secondly, to introduce the payment for the medicines by patients in addition to the stated circulars; thirdly, to introduce the charge of patients while their first visit of the outpatient institution, fourthly, to define the list of the costly medical services, that could be paid at the expense of the budget means and which could be paid

by patients, fifthly, to envision while annually approving a budget for the healthcare a norm on the basis per head but not less than 3% from GDP

Therefore it is necessary to define a clear state system of the financing of the healthcare which would define a solidary responsibility of the all objects of the healthcare: state, employers and citizens. It is probable the creation of the one payer for the health services – healthcare fund - to all healthcare providers. Healthcare financing of the territories of the republic of Kazakhstan should be performed on the basis of the capitation, and the created fund of the healthcare would have functions of the leveling between “rich and poor” regions. While implementing such a program there will be a possibility to influence health indicators as main component of the national security and steady development of the Republic of Kazakhstan in the modern conditions.

According to WHO data in our country 37% of the medical services are paid directly by patients. In essential, the shady market of the medical services is created in the healthcare. At the same time, the notion “co-payment” was introduced into the Law “About health protection of the citizens of the Republic of Kazakhstan” (with the modifications and additions), i.e. the payments for the medical services by patients are legalized in some way, however the mechanism of the realization of the co-payment is not elaborated by the Government so far.

The processes of the reforming of the healthcare system as one of the most complex systems, should be considered from the generally accepted positions of the building the acceptable algorithm of the system’s development. The component of any process of the reform is elaboration of the clear view of the perspective or expected results. In order to reach the goals a set of the certain actions expressed in a program is necessary, i.e. the Government should approve long term programs of the realization of:

- legislative policy
- structural policy
- investment policy
- economical policy
- manpower policy
- innovation policy
- intersectoral policy

In our view, “maximal satisfaction of the needs of the population in the volume and quality of the medical services for the achievement of the acceptable level of health by the way of optimal combination of the interests of the citizen, state and employer”, is the most adequate for the social-economical conditions of the Kazakhstan society.

DEVELOPMENT PERSPECTIVES FOR POSTGRADUATE MEDICAL AND PHARMACEUTICAL EDUCATION IN THE REPUBLIC OF KAZAKHSTAN

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Ministry of Health of the Republic of Kazakhstan

Postgraduate medical and pharmaceutical education is a high degree of continuous education system, that its goal is scientific and scientific-pedagogical training for higher

qualification of the participants. This training is accomplished in clinical residency, Master, Postgraduate Research Study and Doctoral Degree programs.

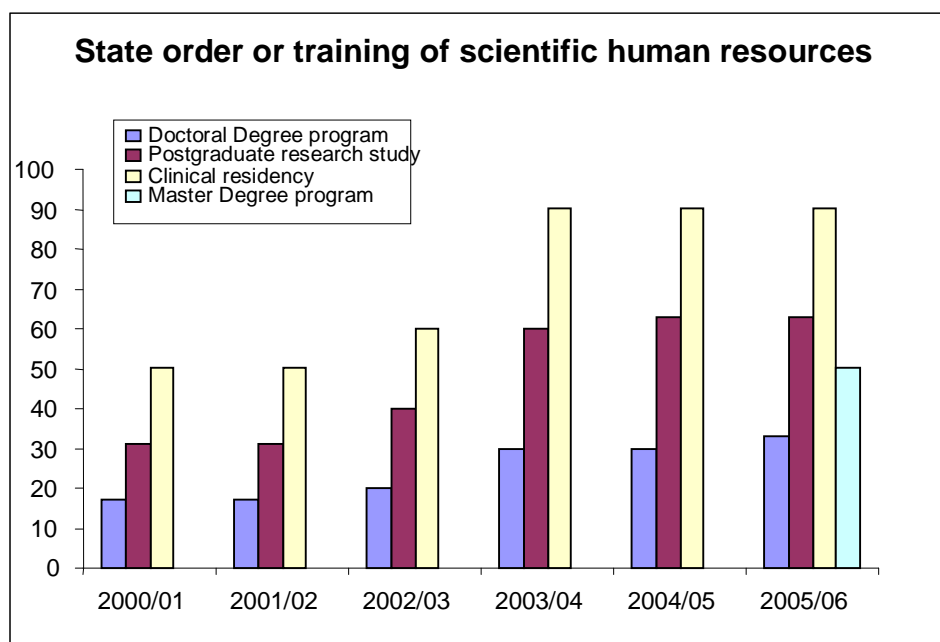
Currently on average 435 postgraduate students a year are studying in 7 medical schools, 14 National research institutes and centers, Almaty State Institute of Physicians Retraining (ASIPR), Kazakhstan School of Public Health (KSPH) on 44 research specialties.

Each year there is an educational approval order from government (by Decree of Government of Kazakhstan) to train specialists graduated from medical schools. Hence, there were placements allocated on medical specialties as follows:

| | 2000-2001 | 2002 | 2003/04/05 |
|-----------------------------|-----------|------|------------|
| Doctoral degree programs | 17 | 20 | 30 |
| Postgraduate research study | 31 | 40 | 63 |
| Clinical residency | 50 | 60 | 90 |

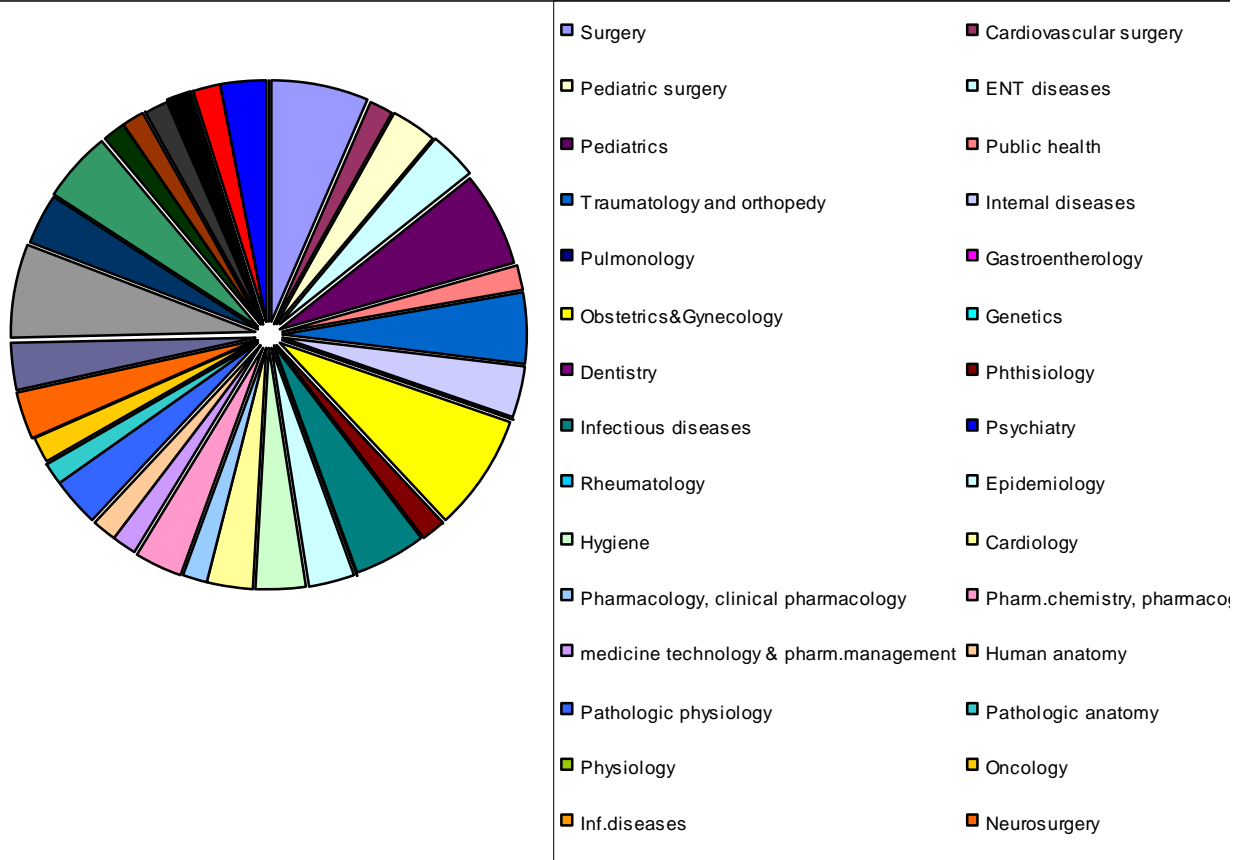
Since 2004, Kazakh Ministry of Health started allocating placements on pharmaceutical sciences. In 2004 there were 3 placements allocated to train postgraduate researchers (aspirants), and in 2005 there were 3 placements on postgraduate research study and doctoral degree program.

Graph 1.

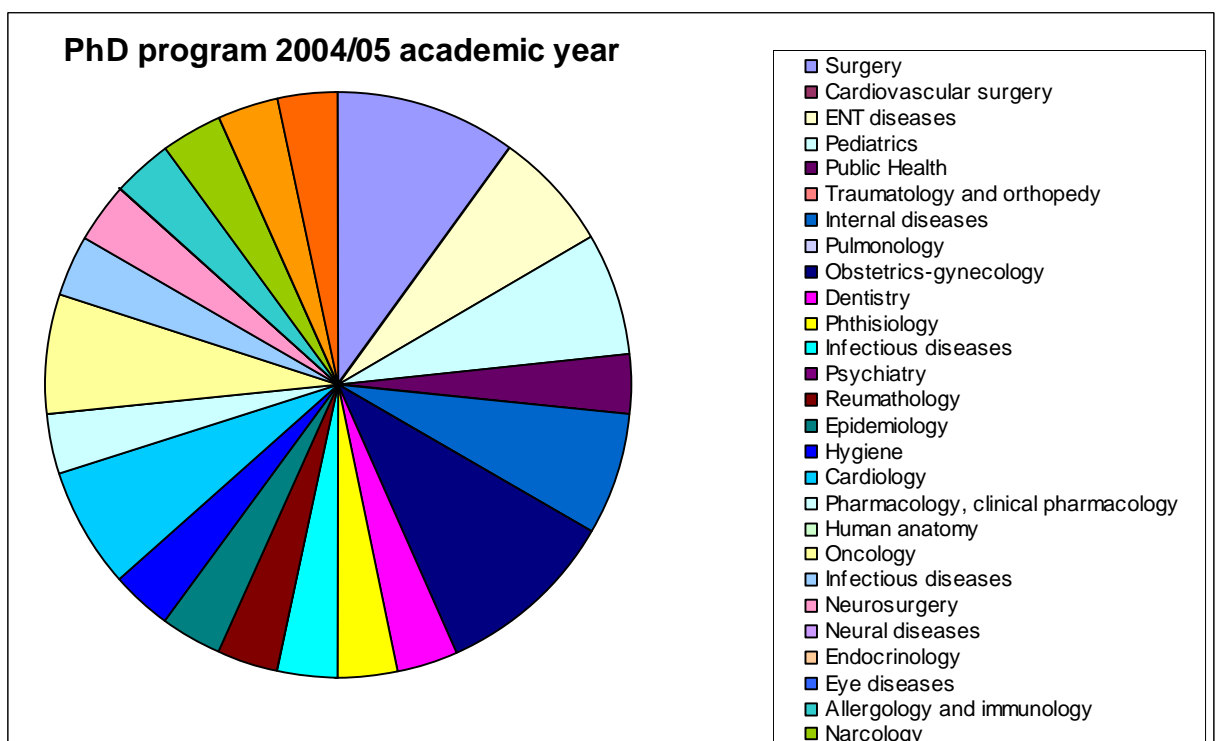


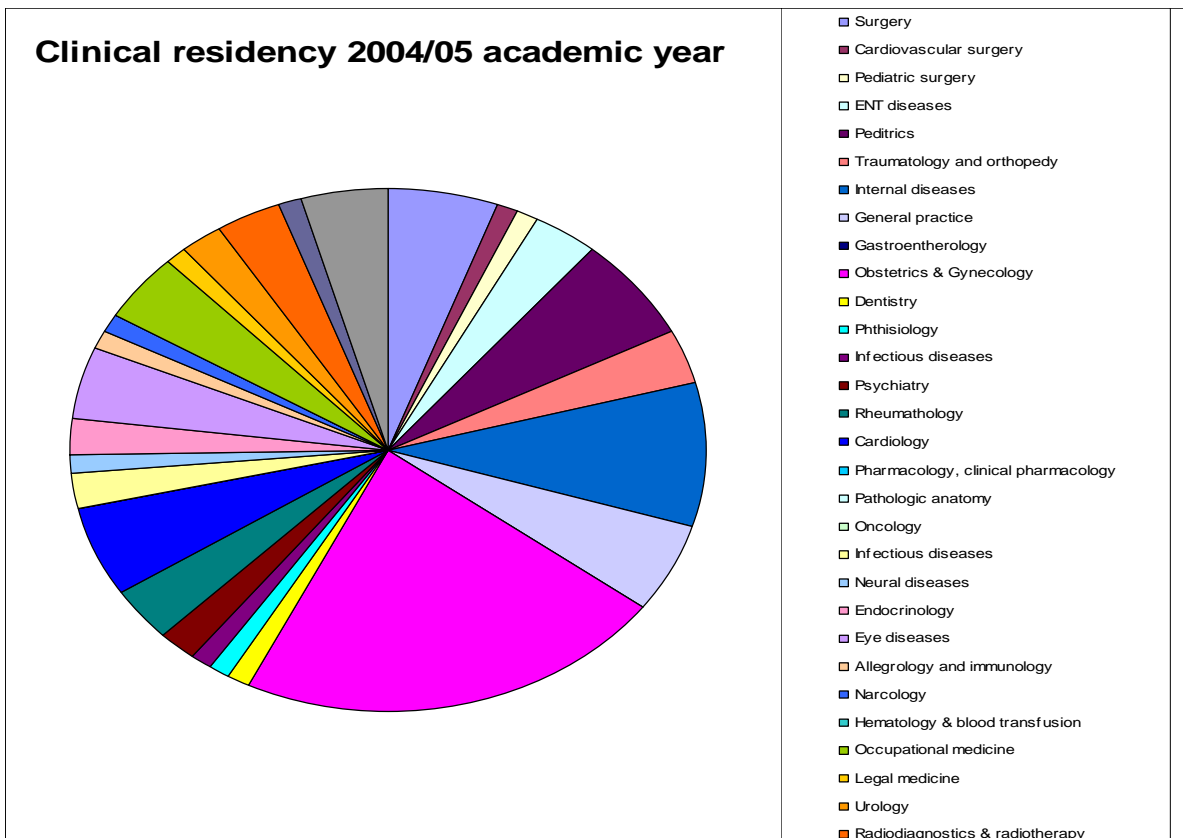
Enrollment of students to postgraduate research training, Ph.D program and clinical residency is carried out in correspondence with actual need and priority directions of scientific, clinical and pharmaceutical specialties. (See Graphs 2-4)

Graph 2
Postgraduate research program, 2004/2005 academic year



Graph 3

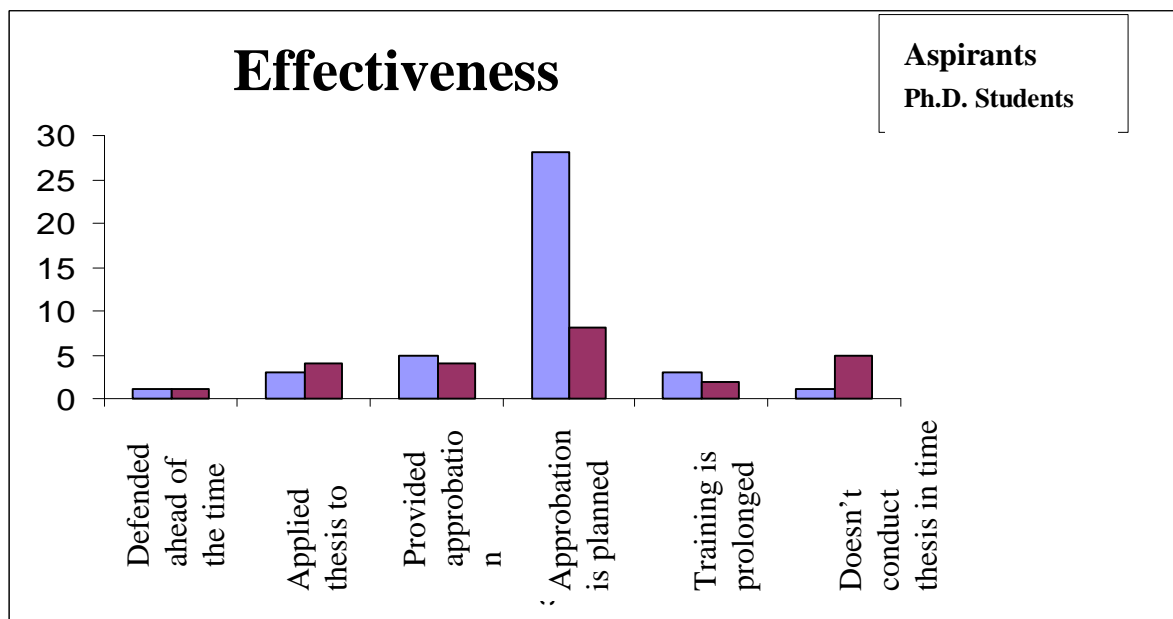




Graph 4

At the same time it is important to emphasize on effectiveness of scientific human resources training. According to regulations about postgraduate professional education, students who are studying by state educational order must finish education by preliminary presentation of their thesis. However, according to our analysis of training effectiveness for 2002 enrollment, following results are obtained: only 85% of aspirants and 65% of Ph.D. students accomplish training plan. Thus, it is evident that effectiveness of training in national medical schools and research institutes of the Republic of Kazakhstan are insufficient.

Picture 5

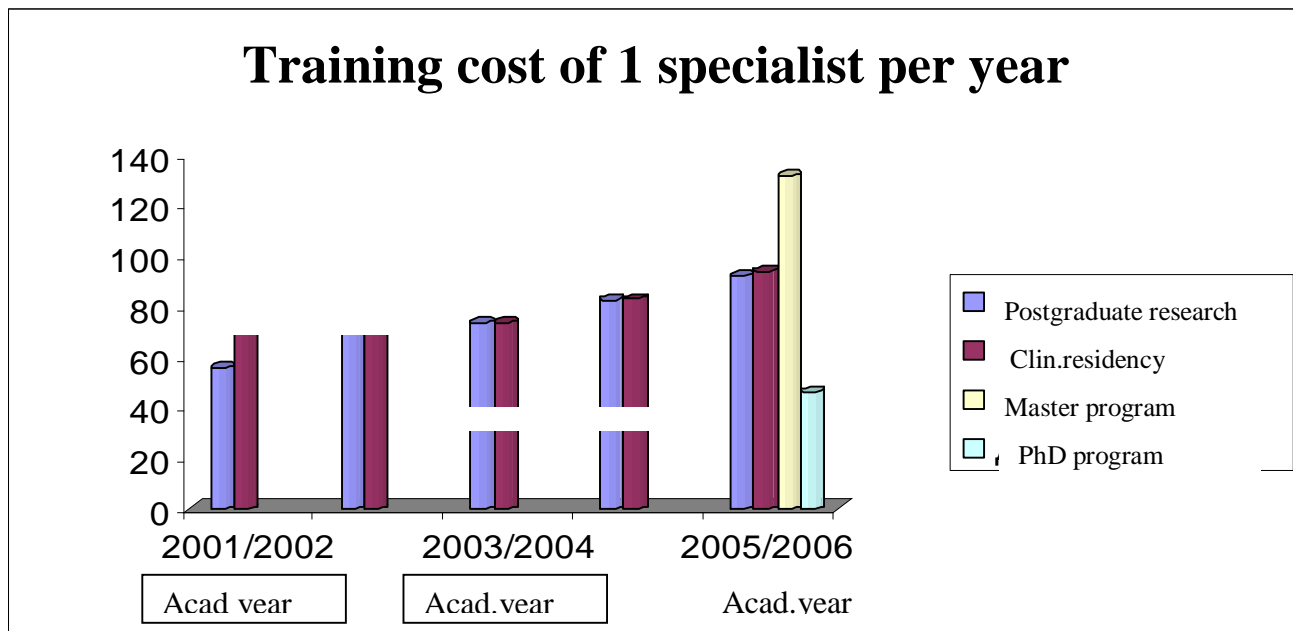


It is necessary to increase the responsibility of heads of medical research and educational organizations, and scientific advisers for preparation plan and timely thesis' presentation to the Council for aspirants, Ph.D. students. At this time, one of the solution mechanisms of this issue is with Ministry of Health of the Republic of Kazakhstan. This is regulated by the rules of training of medical and pharmaceutical specialists in the clinical residency, Master programs, Postgraduate research study programs and Ph.D. programs where Ministry of Health has a right to not assign state order for placements for those organizations where training is not finished by defense of thesis in a timely manner.

Stabilization of economical situation in the country allows significant increase in expenses of state budget to education. Thus, there is a yearly increasing in volume of financing for education, and currently, training cost of students are as follows: master program student is 132,000 tenge, aspirant is 92,000 tenge, and residency student is 94,000 tenge. For the first time, since 2006, financing of resources are included into labor's remuneration of research consultants in the amount of 50 hours for one Ph.D. student in a year.

Graph 6

Рис.6



Currently conserving weak material and technical equipment of medical research and educational organizations does not allow conducting investigations at the high research level. In this regard, for rational use of assigned means there are concretized expense items for education by rules of planning and calculation of the expenditures for training of research specialists. There are also anticipated expenses for professional practice of master program students, for purchasing of training-methodical literature, using internet network and electronic manuals, purchasing of equipment, production and keeping of biological materials, manuals for training and research work.

The message of the President to people of Kazakhstan on 19th March, 2004: «To Competitive Kazakhstan, competitive economy, competitive nation!» defines training of managers as the top-priority task for health system. The State program reform and development for healthcare of the Republic of Kazakhstan for 2005-2010 establishes a goal of improvement of health sector management for training of health managers. One way to provide the health sector by qualified health managers is to carry out both qualification improvements and retraining. Consequentially, there were 50 placements for training health managers in Masters program for the first time since 2005. The training of master program students will be accomplished in accordance with developed and approved State obligatory standards of education of RK on specialty «6N1101 – Medicine». For training of these specialists Kazakhstan School of Public Health received license to conduct this kind of training. So, 2005/2006 academic year there will new formation of specialists oriented to international educational area.

Currently, the republic is in process of carrying out actions to reform the educational system. Thus, State program for educational development was developed and approved by Decree of President for 2005–2010. The goals of this program are modernization of national system of multiple-level education for quality improvement of human resources training and meeting the individuals' and society's needs. The Program mandates a number of measures among of which:

- Creation of entire three-stage model of specialists' training (Bachelor program – Master program – PhD program), based on accumulated credit system of education;
- Forming of united educational, informational environment;
- Integration with world educational area.

With a goal of conducting serious reforms in the area of medical and pharmaceutical education, increasing of medical care level and population's health improvement, plenipotentiary authority in this area has developed project of Conception and reforming the medical and pharmaceutical education of RK for 2010.

In correspondence with current Conception postgraduate medical and pharmaceutical education, this will include residency, Master and PhD programs.

People graduated from internship may continue education on particular clinical specialties. Education periods will depend on profile of specialization (2-4 years). At the end of residency, there will be state attestation on profile of specialization with delivery of corresponding document. Only people, who graduated from residency, will be accepted to independent clinical practice on specialties of particular clinical profile.

Also persons with academic degree of bachelor could continue education in master programs on medical and pharmaceutical specialties. In a frame of master program there are two potential directions: 1) profile deep training, and 2) research-pedagogical training. Curriculum of master programs will suppose scientific-methodological direction of education and profound specialized training in appropriate area. It is assumed that there will be significant spread of specialties for the profile and scientific-pedagogical training in master program. Master program's graduating students will receive academic degree “master of medicine” or “master of pharmacy” depending upon specialty profile. Masters will have right to continue education Ph.D. programs.

Ph.D. program is final educational level of training research and scientific-pedagogical specialists. Now existing postgraduate research study, obtaining a research leave, traditional Ph.D. program on medical and pharmaceutical specialties and other forms of thesis preparation will be transformed into Ph.D. program.

People, who studied in the PhD programs and defended their doctoral thesis, will receive academic degree of philosophy doctor (PhD) on various aspects of medicine and pharmacy.

According to Conception, system of postgraduate medical and pharmaceutical education will be correspond to market economy's requirements, globalization processes, commonly recognized requirements; it will increase youth's interests to receive academic degree, and will

help to solve a problem of upgrading the scientific-pedagogical human resources in medicine and pharmacy.

METHODICAL ASPECTS OF PERSONNEL SELECTION FOR HEALTH CARE FACILITIES

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Management of personnel is one of the important aspects of process' quality improvement and performance of any facility, including the health care facilities. Medical care imposes absolutely special demands of personal and professional characteristics of physicians. The medical profession comes with specific risks where physicians' take responsibility for the health and life of unfortunate people often suffering from stress. Appropriate selection and management of human resources in health care sector is now a significant part of health care organizations' development. This article covers methodical aspects of selection of personnel, defines indices of professionalism, and provides general strategies for searching the specialists.

Keywords: organization, management, human resources service, selection of personnel, professionalism, professional competency, professionogram, methods of human resources selection, procedures of selection of personnel.

Nowadays the main tasks of human resources' services concentrate around following spectrum of problems:

- 1 search, recruitment and selection of personnel,
- 2 professional adaptation and training of staff members,
- 3 definition of salaries and benefits,
- 4 attestation and human resources rearrangement,
- 5 social advocacy of personnel, and
- 6 Juridical and disciplinary aspects of human resources management.

Selection of human resources might be viewed as combination of scientific-methodical, organizational, personnel, material and technical, and program aspects.

Scientific-methodical aspect determines methodology of selection, scientific principles, methods and criterions required from candidates. Furthermore, the assessment and control of selection effectiveness, analysis and summarization of data, development of recommendations on activity improvement of human resources services have important implications.

Organizational aspect of human resources' selection is a complex form of evidenced actions carried out at one time or in series at different stages of work with a goal of reducing the periods and increasing of selection quality.

Personnel aspect of selection is recruitment of all necessary specialists at the different stages of work: including managers of highest level, heads of appropriate units, specialists-masters, psychologists, jurists, economists, outside experts.

Material and technical aspect of selection is necessary financing of conducted actions and equipment by required organizational technique.

Software aspect foresees automation of separate stages of human resources selection with using appropriate computer software.

Analysis of last research in area of studying professional competency enables one to choose next groups of professionalism indices of person and medic's activity.

1. Objective and subjective characteristics.

a) objective characteristics; how much a person is corresponding with requirements of profession, his contribution to practice,

b) Subjective characteristics; how much a profession is meeting the needs of person, its tendencies, how much a person is satisfied by professional activity.

2. Process-resulting characteristics.

a) process characteristics include; norm-ethical indices, indices of available staff (those results which were achieved by specialist at work), forecasting (is person searching carrier perspectives, what is the zone of his closest individual and professional development), indices of learning ability (aspiration for education, retraining, readiness to experience exchange with colleagues), characteristics of social activity and technological indices,

b) Resulting characteristics; direct (assessment of job results) and indirect (assessment of worker's activity on characteristics).

Medicine makes rather exacting requirements to psycho-physiological features of specialist-professional. There is professional disease known as "syndrome of emotional combustion" peculiar to physicians who involved into long intensive relations with other persons by «human-human» kind of activity, as with other specialists of system. Also this phenomenon might be related to deformations of professional activity.

Aferomentioned concept confirms once again the circumstances that evidence-based methods of selection, adaptation and prevention of professional risks.

Going back to the methods and procedures of candidates' selection for vacancies, one must consider:

1. Search inside of organization. Most of the organizations try to find candidates at their "own" home before entry to labor market. The most commonly used methods of internal search are vacancies' announcement in the internal mass media: plant's newspapers, wall newspapers, specially published informational leaflets, and also addressing to heads of units with request to nominate candidates; and analysis of personal records with goal to selection of personnel with required characteristics. As a rule, search inside of organization doesn't require significant financial expenditures, promotes to strengthen authority of leaders in staff's opinion. At the same time, internal search often strikes against opposition of units' heads aspiring to «hide» the best staff members and keep them «for themselves». Moreover at the search of candidates inside of organization selection possibilities are limited by number of personnel amongst who might be no needed persons.

2. Selection by means of personnel. Human resources unit can address to organization staff with request of assistance and make informal search of candidates among their own relatives and friends. Current method is attractive, first by low costs, second by achievement of rather high degree of the candidates' compatibility with organization due to their intimate contacts with organization representatives. But ordinary staff members are not specialists in area of candidates' selection. They not always hold enough information about workplace, bonus, etc., and often they are prejudiced regarding potential of their close people.

3. Selfshown candidates. Practically any organization gets letters, calls and other kind of asking of people searching a job. Not having needs in their work current time organization must not just refuse from their applications – it's necessary to support database of these people, their knowledge and qualification may be of use in future. Supporting those databases costs not much and provides to have representative reserve of candidates close at hand.

4. Announcements in mass media – (on television, on radio, and in press). Main advantage of current method is wide coverage of population at relatively low costs. At the same time disadvantages are back side of advantages – announcements in mass media may lead to huge influx of candidates most of whom will not have requested characteristics. To avoid it, announcements may be published in special literature. Such focal point of search that provides highest level of their professionalism and significantly lightens the next selection by means of limiting a number of potential candidates.

5. Search in the institutes and other educational facilities. Many leading organizations constantly use this method for attracting the young specialists. Going to educational facilities, organization conducts a presentation of company organizing appearances of top-managers, demonstration of production, video films of organization, answering for students' questions and providing interviews with future graduates interested in the organization. This method is very resulting for attracting defined kind of candidates – young specialists. At this time using this method is limited, as it is unlikely for General Director of the university identify their best specialists for other employment.
6. State employment agencies. Governments of most of the modern countries facilitate to increasing a level of population employment creating special organs which do job search for citizens asked help (bureau of job placement). Each bureau has own database. Organizations searching personnel have an access to that database. Using of state agencies gives possibility to provide focal search of candidates at insignificant costs. However current method seldom provides wide cover of potential candidates.
7. Private agencies on personnel selection. For last 30 years personnel selection turned into roughly developing sector of economics, today in many countries including Kazakhstan there are private companies specialized in this area. Each agency has own database, and also accomplishes special search of candidates according to client's requirements. Private agencies provide rather high quality of candidates, their accordance with client's requirements and thus significantly lighten further process of selection. High costs are factor limiting wide using of current method, which is used in cases of search of top-managers and specialists who influence functioning of organization very much.

Analysis of indicated above methods of selection of the candidates enables simple, but exceptionally important conclusion – there is no optimal method and that is why department of human resources must have full set of techniques for attracting the candidates and use it depending on concrete task. Most of the specialists agree in opinion that for successful organization of candidate search should be guided by two main rules:

- 1 Always start the search of candidates inside of organization;
- 2 Use at least two methods of attracting the candidates from the outside.

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HISTORY OF THE ORIGIN OF THE BIOETHICS

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Prerequisites of the bioethics were put by Aristotle within the frames of the general ethics. He recommended in the scientific search to act rationally, because those obsessed by the craving for pleasure can find themselves in the power of enemy.

The ancestor of the creation of the treatises about ethics was Hippocrates who was the author of the writings of ethic direction: “The Owe”, “The Law”, “About doctor”, “About favourable behaviour”, “The precepts”

At the source of the modern ethics was V.R. Patter who gave a definition of the biomedical ethics as an interdisciplinary scientific direction that combine medical-biological knowledge and human values.

Bioethics that appeared in the 70s of the 20th century was kind of “shout about help” from the people who did not deal with medical and biological research, but faced a risk of their negative consequences, that doctors and scientists didn’t know how to avoid, or, which they were not always wanted to control. But impetuous development of the medicine and biology gave a birth to the new questions concerned not only doctors and scientists , but everybody. Medicine that for the long time was considered as Christian profession that propagated high ideals of the humane and compassionate attitude to the patient, became more perfect in the technical aspect. Today medical science in it’s enthusiasm with the technical progress in part lost its human face, which led in turn to the appearance of the moral problems during scientific research.

It became clear that biological-medical research can be performed with the violation of the rights of the patient .Recently, the more international public organizations defend rights of the person participating in the experiment or clinical trial.

In the Republic of Kazakhstan since 1995 the Association of the physicians and pharmacists of Kazakhstan involves into dialogue about creation of the ethic committees in the country the more representatives of the science, medical practice and community as a whole. Today there are positive changes in the legislation of the Republic of Kazakhstan towards the defense of the rights of the patient participating in the clinical trials. The big work on implementation of the mechanism of the control of ethics of the biomedical research is ahead , this work should be performed not only in the healthcare system, but in all spheres of the scientific search.

INTENSIVE TRAINING ON BIOETHICS IN KAZAKHSTAN

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In connection with rapid development of new medical technologies and growth of scientific studies with involving of human being as subject of research in all over the world, ethical expertise of such kind of interventions has more great attention. There were established special organs for conducting ethical expertise – Committees (commissions) on ethics, and also a whole series of international documents regulating the work of such Committees (commissions). The goal of Committees’ activity and ethical expertise conducting is rights protection and health safety providing for research participants. In spite of high competency in the defined scientific area, carrying out of ethical expertise requires from the members Ethics Committees knowledge of bioethics which is developing as interdisciplinary direction of modern science. In this connection educational programs on bioethics both for scientists and for Committees’ members take on special significance. Training of Kazakh scientists on bioethics questions is necessary in current context of health research development. It’s important to form a key group of research officers acquainted with bioethics issues in medical science for further activity.

Kazakhstan School of Public Health (KSPH) implements the questions of health research ethics to its educational programs since 2001. Since 2002 KSPH became member of international program «Intensive trainings on bioethics» jointly with Bangladesh Medical Research Council under the financial and technical support of International Premium on

Bioethics Education and Career Development of the Fogarty International Center (FIC) and National Institute of Health (NIH), USA.

Supervisor of the program is professor Harun-Ar-Rashid, MD, MSc, PhD, director of Bangladesh Medical Research Council (BMRC) and member/secretary of Ethics Committee attached to Council, which is considered as National Committee for country. He studied epidemiology, international health administration, research management, planning and management of informational systems, and research ethics in the recognized international institutions such as Center of Diseases Control (CDC), Management of Health Science (MSH), and Harvard School of Public Health (HSPH).

Program has both Kazakhstan and Bangladesh components. Consultant on Kazakhstan is professor M.K.Kulzhanov, Rector of KSPH; program coordinator – B.E.Sarymsakova, PhD, Research Secretary of KSPH. Consultants of program from the international organizations – Dr Adnan A. Hider (USA), prof. Peter A. Synger (Canada), Dr Vasanta Muthusvami (India), prof. Zulficar A. Bhutta (Pakistan).

Continuity of the program is four years. It includes the next main items:

- 1: Development of full curriculum for workshop on bioethics;
- 2: Conducting of training on research bioethics for young scientists of different research specialties on base of KSPH.

Training program for intensive seminar on research bioethics was developed in KSPH in 2002-2003. Those procedures included seminar, discussion in workgroups and meetings. In total about 20 specialists from national research organizations participated in development of the workshop curriculum. During the development there was defined faculty for conducting workshop on research ethics in Kazakhstan. Curriculum was approved by Consultative Committee, which will accomplish general program management, its monitoring and evaluation. Curriculum was translated into English and sent to international consultants for review and introduction of suggestions on its improvement. Also evaluation forms of participants' knowledge and workshop' as a whole were developed.

The workshop is for young scientists under 35, who do research on different scientific specialties. It's planned to train 50 people during the three 5-days training courses. The main goal of training on research ethics is improvement of ethical practice during carrying out the research; increasing of knowledge about ethical issues in process of conducting the research with involving of people, providing of basic and applied knowledge on research ethics with international aspect, and acquaintance of participants with existing guides on ethics.

Workshop will particularly define issues of ethics relating to international health research. Content of workshop will include: historical perspectives of ethics, concerned to health research; international declarations and guides on research with involving of human being; informed agreement; confidentiality; motivation; clinical research ethics; ethics of population and demographic research; ethical questions of research of reproductive and infant health; functions of Committees on ethics; guides on ethical expertise; conducting of research in developing countries; religion and culture in ethics and others.

The workshop faculty includes key national experts who have appropriate professional and teaching experience in philosophy, legislation, public health, epidemiology, reproductive health, genetics, and etc. One of the trainers is program director, Professor Harun-Ar-Rashid who has experience for providing these seminars and speaks Russian fluently. In total 10 trainers were invited for this workshop.

For participation in the workshop there are invited persons doing research in sphere of biomedicine, clinics and public health. Notifications are to be sent to all medical institutes,

universities, governmental and nongovernmental medical organizations. Head of each organization must choose several candidates for participation in the seminar according to selection criteria, which were created during the curriculum development and were set out in informational letter. Candidates must show their research activity and research experience should number minimum 3 years. Candidates send all necessary documents including recommendations of organization's head to address of Organizational committee of seminar (OCS). Selection of potential participants is provided on competition base and approved at the meeting of OCS. Participants receive certificates signed by Rector, Research Secretary of KSPH and Director of program.

To strengthen the Program quality there will be attention to assessment, which will be a continuous process based on tasks, methods and standards. Two main parts: development of curriculum and training will be assessed same time. Conformity of training program to participants' requirements will be evaluated regularly. Training's evaluation will be directed to measure of students' reaction, receiving knowledge, skills, attitude and its practical use.

Training's evaluation will give a basis for continuous change of training process (addition, removing, schedule review, consecution and etc.) for the best corresponding to participants' requirements. Both trainers and students will be involved to evaluation process. Evaluation will be conducted through the measuring of learning index using next formula:

$$\text{Learning Index} = \frac{\text{Calculation after training(\%)} - \text{calculation before training(\%)}}{100 - \text{Calculation before training(\%)}} \times 100$$

During the program's action there will organized direct meetings with participants, discussions in groups, field visits, reports to Consultative Committee, involvement of international consultants. For evaluation of training and program will be used structured questionnaire.

Tracing System of students:

During the next seminar electronic mail addresses of all participants will be collected (including participants from Kazakhstan) for further communications. Students will be invited to respond to electronic questionnaires during two years after completion of the course. The answers will find impact of this training course on working activity of students.

For program managing there were created next committees:

1. Organizational Committee of Workshop (OCW): For selection of participants and organization of training course in Kazakhstan Rector of KSPH formed Organizational committee of workshop. Maximum number of Committee's members mustn't exceed 5 people. The types of Committee's activity will be organization of meetings on development of curriculums and determination of selection criteria for candidates to participate in training.
2. Consultative Committee (CC): At the head of Consultative Committee is Rector of KSPH. The committee consists of 7 persons. Research Secretary of KSPH will be member/secretary of the committee, 5 other members will be from number of heads of medical and scientific institutions of Almaty city. CC will assess and observe all actions on program.

The Yearly Program Report (YPR) will be prepared at the end of each year for Fogarty International Center (FIC). Report will include recommendations of different consultants, evaluation of course and program. Chapter about activity of international component (Kazakhstan) will be translated into Russian for all members of the Committees. Also will be published manual on intensive seminar in Russian and English languages. Russian version of manual will be disseminated amongst other countries of Central Asia.

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GENDER DIFFERENCES OF CERTAIN BEHAVIORAL RISK FACTORS OF ADOLESCENTS

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It is considered that in comparison with other age groups adolescents are relatively healthy with the lowest mortality levels at 10-15 years (OECD, 1996). Nevertheless, this group characterizes by specific health problems (Millstein et al, 1993; Schulenberg et al., 1997) resulting from morpho-functional, psychiatric and social peculiarities of adolescence, such as traumatism, tobacco, alcohol and drug dependence, violence, early pregnancy, suicide, infectious and non-communicable diseases [1]. It is important that in socialization process of teenagers adopt gender behavioral stereotypes accepted in society those later form adolescents' behavioral risk factors [6].

Research goal is to investigate gender differences of adolescents' behavioral risk factors.

Material and methods: Within the framework of 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 where nested whole was the class of a secondary school. Mathematical processing was done using SPSS statistical software.

Results and discussion:

Thus, investigation showed gender differences on various aspects of healthy lifestyle. Boys are more exposed to risk factors as tobacco smoking according to high frequency of initial smoking experience (in average 10% less than in European countries) and regularity among boys compare to girls. This pattern is true for 11-12, 13-14, 15-16 study age groups. While studying alcohol consumption patterns it was revealed that gender differences of initial experience are typical for 11-12, 13-14 age groups not for 15-16 age groups. The most popular drink in Almaty among girls and boys equally is beer. Interestingly, according to HBSC data the average week consumption of beer among adolescents of 13-14 years in Europe is twice higher than among adolescents in Almaty.

It is worth noticing that positive correlation was revealed between consumption of different types of alcoholic drinks, especially in adolescence leading to alcohol dependence in adult period, therefore beer consumption in adolescence is a trigger point for steady risk behavior forming towards spirits consumption.

Behavior determining health state in childhood and adolescence is predictive regarding morbidity and use of health care services because the early behavioral models remain the same in adults. Therefore, existing gender differences of behavioral risk factors must be taken into account for development of preventive programs in schools, seminars, as well as public campaigns for adolescents' tobacco and alcohol reduction programs.

MEDICO-SOCIAL ASPECTS OF CARE OF DISABLED PEOPLE

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Salvation of problems of disabled people is in the national, and not in the narrow departmental area, and in many respects it determines a face of social policy of the government. In modern theory and practice of care for disabled, there is a special approach to problems of limited capabilities, where social integration must be accomplished on terms of persons with limited capabilities, and not on terms of people who have good health. In world practice there is a worked-out scheme of complex services to persons with limited capabilities, which begins from assessment of their needs and requirements. In the article, we suggest an approach for care of disabled practicing in a medical-social service of the Model Family Medicine Center “Demeu” in Astana.

Today the term “invalidism” more often is used for indication of public concept of discrimination of person with limited capabilities based on health factor. Health factor is that socio-biological sign which inserts differentiation into the group differences of people in society. «Health-NoHealth» platform is a specific system in which human functioning accomplished in structure of public relations and production relations. World Health Organization describes status of limited capabilities as follows:

- ailment – any loss or anomaly of psychological, physiological or anatomical function or structure;
- limited capabilities – any limitation or loss of capability to do some activity so or within the limits of that is considered as norm for man;
- Incapacity (disability) – any consequence of defect or limited capabilities of concrete man, which is hampering to the accomplishing of any normative role by him based upon age-specific, gender or socio-cultural factors.

Social role of man receded into the background in operative law field and concrete social conditions, and conception “invalid” was not considered from the point of multilevel rehabilitation using social, economical, psychological, educational and other necessary technologies.

In modern theory of care, two approaches to problems of limited capabilities were established: medical and social. According to the first, person who has physical or mental illness must adapt to environment. To be in agreement with norms existing in society he must pass through medical rehabilitation. This approach separates people with limited capabilities from another categories of population, supports public stereotypes about impossibility of independent existence of such people beyond support of the professionals and volunteers, influences legislation and social service.

Social or interactive approach is based on interests of people with limited capabilities. Social integration must be realized on terms of people with limited capabilities, and not on terms of healthy people. In social work it is accepted to consider problems of physical and mental health of person in context of problems concerned with possibility of realizing his rights for equality, harmonic development and deserved existence.

As a whole, invalidism as problem of human activity on terms of limited freedom of time, include several more aspects: social-environmental, psychological, socio-ideological and production-economic in spite of purely medical constituent.

Social-environmental aspect includes questions concerned with micro-social environment (family, colleagues, shelter, workplace, etc.) and macro-social environment (city-forming and informational environment, social categories, labor market and others).

Psychological aspect expresses both personal-psychological orientation of the invalid and emotion-psychological perception of invalidism problem by society. Persons with limited capabilities belong to category of so-called less-mobile population; and they are less protected, socially vulnerable part of the society. It is concerned with defects of their physical status, moreover to a great extent social nondefense of this category of population concerned with presence of psychological factor forming their relation to society and embarrassing its adequate contact with them. Psychological problems emerge at disconnection of invalids from outside world both owing to existing illnesses and as a result of maladjustment for disabled. All of that leads to emerging of emotion-volitional disorders, depression development, and behavior changes.

Socio-ideological aspect determines content of practical activity of state institutes and forming of government’s politics regarding invalids and invalidism. In this context it’s necessary to refuse from prevalent view to invalidism as index of health of population, and perceive it as index of effectiveness of social policy, and realize that solving of invalidism problem in the interaction of disabled and society.

Production-economical aspect is mainly related to problem of forming of manufacturing base of population’s social defense and market of rehabilitation products and services. This approach lets to orient for increasing of number of patients able to partial or full independent professional, everyday and social activity, creation of system of address satisfaction of their needs in rehabilitation agents and services; but it in its turn will promote integration of persons with limited capabilities into the society.

In Model Family Medicine Center “Demeu” in Astana, truly unique integration of social services’ system into traditionally medical organization has been accomplished. A medical-social service “Umay” was created at the ambulatory center. The mission of “Umay” was stated as follows: rendering of medical-social, *psychological, juridical, educational, correcting, and other types of care and services to socially vulnerable categories of population.*

At the current time, one of the priority activities of medical-social service of the MFMC “Demeu” is realization of project on creation of club “Dostyk” for people with limited capabilities for improvement of psychological, physical and social health of this category.

Staff members of Medical-Social Service (MSS) physicians and nurses are facing the tasks on: 1) organization of club's activity, and defining its structure; 2) development of program of exercise therapy using the simplest apparatus for development of some groups of muscles (by prescription of physician) and courses of psychological and physical adaptation, skills of self-care and using of computers; 3) attracting of the specialists (jurist, psychologist, medical workers, etc.) for conduction of consultations, trainings and education, and also volunteers at MSS "Umay" for home health to people with limited capabilities, who are not able to move independently; 4) implantation of new methods of therapy to the work of labor rehabilitation office of the MSS "Umay" (open a study group of dress-making); 5) organization of the trade fairs in the city galleries for sales of products of club's members, and 6) realizing of interaction with NGOs interested in invalids' problems, and governmental structures with the goal of joint solving the problems of this category of people.

Social workers provided assessment of needs and requirements of people with limited capabilities on PRA methodic (assessment at micro-social level). 10 visitors of the labor rehabilitation office, people with limited capabilities, were as analysts (experts).

Results:

Task I: To detect the main problems.

Method – "Problems' gallery": health - 10 people, psychological and moral issues - 10, lack of contacts - 10, loneliness – 8, financial problems - 8, everyday problems – 4 people.

Conclusion: most of the interviewed need a solution of problems concerned with health and finances, and also problems of loneliness and limited contacts.

Task II: to determine ways of solving the detected problems jointly with analysts.

Method – "Group interview". Decisions suggested by interviewed;

1. to study to manage independently with their own needs – 10 people,
2. to attract the volunteers for assistance – 10 people,
3. to organize trainings on principle "Equal-to-equal" - 10 people,
4. to share with each other how to manage with problems, to meet all together – 8 people,
5. to attract attention of governmental structures for help and support – 8 people.

Conclusion: Results shows the necessity of establishment of club for relations on principles "Equal-to-equal", training on self-care skills, creation of services system for improvement of psychological, physical and social health of persons with limited capabilities.

For assessment of needs of people with limited capabilities on the next level – community – sociological service of ambulatory has developed appropriate tools for conducting the research, one of the priorities of is assessment of possibilities of activation of current population category either. The main strategy of interview is directed to simultaneous research of invalids' and community opinions on questions indicated in the article.

This research included the following the rules of traditional sociological survey and supposes also definition of next spectrum of problems:

- Socio-economical status of invalids,
- Self assessment and self relation of disabled,
- Value orientations, interests of the persons with limited capabilities,
- Point of public opinion concerning invalids,
- Program (recommendations) of society activation.

Current time research is on the stage of collecting the information (field stage).

In conclusion, it should be indicated that consultative services by social workers, jurists, psycho-therapists and sexopathologists are normal and usual unit in clinical practice of medical facilities in the countries of Western Europe and America. Nobody does organization of new social approach to problem of invalid's personality in practice of medical social unions of Kazakhstan.

Attracting of professional psychologists and social workers to the problems of invalids and their relatives, providing of actions on their integration into public-useful activity promotes

increasing of life expectancy of patients, reduction of appeal ability in medical facilities and decreasing of doses of some drugs. Such approach lets to economize sizeable resources.

PECULIARITIES OF MEDICAL CARE FOR ELDERLY PEOPLE IN THE CONDITIONS OF MULTIPLE-DISCIPLINE HOSPITAL

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Ageing of population by means of increase of people capable of working can be observed in all developed countries. According to the UN classification it is the age of over 65 years, in Russia 60 years, in Kazakhstan over 63 years. European region is on the oldest place on the planet where 18 out of 20 countries have the largest population of middle and old age. In the nearest 20-30 years the most significant is the increase of age group over 80 years in population structure, growing population can be doubled and reach 5-7 % of general population in most of European countries till year 2025. Important manifestation of population ageing is the increase of women as compared to men in the age of 65 and over. In Germany the ratio women to men over 65 years is 1,4 and in the age of over 80 is 2.0; in UK it is 1.45 and 2.3 respectively, in Holland 1.5 and 2.3. According to Central Clinical Hospital data in 2004 the rate in the age group over 60 is 1.0 and for over 8 – 1.4. The important feature of ageing is rise in number of single aged people to more than 20% in age group over 60.

Studying the issue of aged people needs in medical and social care it was revealed that group over 60 addressed to district physicians more often, as in 61,1% of all polyclinic's visits and 85,12% home calls. Among people investigated home medical care used every 10th in 60-69 age groups, every 3rd in 75-79 age group and every 2nd in group over 80. Our investigations revealed that 80% of people over 65 suffer from multiple chronic diseases. Only 3,4% had 1 disease, 18,5% had two diseases, 37,4% - four diseases, 14,8% - five and more diseases.

There are certain clinical manifestations of diseases of old people, among them:

- Multiple lesions of organs and systems (in average 4.3 diseases diagnosed in every men over 60, and 5.2 in every women of the same age. Every 10 years more 1 or 2 diseases are added).
- Chronic clinical course
- Cleared onset (quit often diseases have atypical (cleared) clinical picture even in acute conditions)
- Atypical symptomatology (in aged people diseases with typical picture can give completely different, atypical clinical picture)
- Concealed dependence (some disorders of aged people are secret to doctor when patients use self-treatment, humbleness and patience)
- Functional manifestations (audio, visual and motor limitations, chronic pain conditions, emotional and mental troubles)
- Common diagnostic schemes of diseases are unacceptable in geriatric practice
- Effect of psychosocial factors

Therefore, our patients, clients of the Central clinical hospital of Medical Center under the President's Affairs Management using high qualified medical care show there high life standards and regressive type of age features. In 1997 there were 49,7% of people over 60, in compare of 2004 with 79,4%.

Our methods adapted and implemented with patients of middle and old age are targeted to receive accessible, adequate, quality medical care, stabilization of health, improvement of patients' quality of life. Systematic medical and preventive activities held, level compliance help to reach good medical, social and economic results.

FAMILY PHYSICIANS COMPLEX IN PROVIDING HIGH-QUALITY MEDICAL CARE FOR THE ELDERLY POPULATION

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The goal of the National Program of Health Sector Reform and Development in the Republic of Kazakhstan for 2005-2010 is implementation of the basic changes in health sector, aimed on health promotion of the population.

According to the experience of the developed countries primary health care organizations (PHC) provide medical care for the most of the adult and child population. In the National Program of the Republic of Kazakhstan primary health care reforms and development are of the first priority.

During the last decades the structure of the morbidity changed towards the prevalence of chronic noncommunicable diseases. It came out due to the achievements of the medicine (effective control of acute infectious diseases), improvement of the living conditions of the population and due to the changes in the medical demographic situation towards the depopulation. That is why the issues of health sector reforms are urgent because the ageing of the population leads to a number of economic and social consequences, one of the most important of which is the unprecedented increase of health expenditures on medical care for elderly /1/. In many countries currently about half of all budget resources of health care system are spent on elderly service. For example, in Great Britain expenditures for service of 1 person of the age of 75 and older almost 6 times exceed expenditures for one person at the age of 16-64. In German age group of 65 and older, which makes up to 15,3% of the population, occupies 44,5% of bed-days in the country, that corresponds to the 23,5% of all health expenditures. In Russia in 1994 the population of the age 60 and older made up 16,7%, and 33,2 % of health expenditures /2/.

Preventive activities among persons of this age group includes complex dynamic examination, clinical examination, the work of various schools (of the cardiologist, neurologist, gastroenterologist, diabetes). As a result of balanced development and implementation of preventive activities during the last years we managed to increase the proportion of prophylactic visits from 15,2% in 1997 up to 33,7% in 2004. The volume of the home care for the attached contingent also increased from 28,4% to 40,1%, including the proportion of active visits from 73,3% to 90,4% accordingly in 1997 and 2004. The main role in preventive activities on early detection of diseases belongs to the annual complex dynamic examination of the attached contingent /3/. Despite the steady composition of the contingent during the last years, its check-ups in the earlier years, the level of diseases detection during the prophylactic examinations remains rather high. All persons with revealed diseases during the prophylactic examinations are liable for clinical examination with prescription of the complex treatment-prophylactic measures.

One of the components of the models of hospital service's optimization and reforming was introduction of the system of early discharge of patients from the hospital with completion of the treatment in the polyclinics – in day or home hospitals. So, in the Central Clinical Hospital in 2001 56,8% of the treated contingent were discharged with average stay in hospital up to 5 days, and in 2004 this figure increased up to 63,2%. Thus despite the evident increase of the number of

hospitalized patients, the tendency for decrease of bed-days of patients' stay in hospital is observed /3/.

For the purpose of medical care continuity maintenance, and also taking into account the age peculiarities of the contingent, besides the treatment in the hospitals treatment in day hospitals, home hospitals are carried out by physicians of UFPC (unit of family physicians complex) and home care physicians. Health status, of the elderly patients, frequency of worsening of chronic conditions, and need in first aid, urgent hospitalization and re-hospitalization mostly depend on the quality of medical care for elderly population.

On the basis of UFPC beginning from November 2003, based on the long-standing experience of work with gerontology patients, the team of operative nurse care was created with the main goal of providing mobile qualified nurse aid to the attached contingent at most short space of time. Thus organization of UFPC and team of operative nurse care allowed to optimize the work with the given category of patients and provide high-quality medical care for elderly population.

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IMPROVEMENT OF HOSPITAL THERAPEUTIC CARE UNDER THE CONDITIONS OF MULTI-PROFILED HOSPITAL

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During the period of forced optimization of health sector infrastructure specialized medical care "suffered" most of all. In multi-profiled hospitals bed capacity of therapeutic departments was either decreased on 1,5-2 times or they were consolidated or shortened at all /1/. As a result the accessibility of specialized therapeutic care for the population was decreasing. It lead to accumulation of undiagnosed main nonepideiological diseases and their worsening, that in turn determined the high level of disablement and premature mortality of people and increased forthcoming expenses /2/. One of reform components of the activities of our institution was restructuring of the hospital's bed capacity that determined reduction of ineffectively functioning beds, closing of duplicating services, including beds, etc. In this course total bed capacity of the hospital was reduced from 317 to 301 beds.

The analysis of patient's hospitalization in 2001-2004 was done by us according to the statistical data of the departments of therapeutic profile.

| <i>Indices</i> | 2001 | | 2002 | | 2003 | | 2004 | |
|--|---------------------------------|---------------------------|--------------------------------|---------------------------|--------------------------------|---------------------------|--------------------------------|------------|
| | Hospital of therapeutic profile | Central clinical hospital | Hospital of therapeut. profile | Central clinical hospital | Hospital of therapeut. profile | Central clinical hospital | Hospital of therapeut. profile | Ce cli ho: |
| % bed-day plan realization | 89,1 | 96,3 | 92,5 | 99,7 | 92,1 | 97,5 | 91,0 | 96, |
| Average treatment period | 9,2 | 8,5 | 9,0 | 8,3 | 9,1 | 8,4 | 9,1 | 8,5 |
| Bed turnover | 32,8 | 38 | 34,2 | 39,0 | 33,8 | 38 | 33,8 | 38 |
| % of urgent admissions to hospital | 8,8 | 12,5 | 8,8 | 12,0 | 7,4 | 11,7 | 6,7 | 10, |
| % of re-admissions | 1,7 | 1,4 | 1,0 | 1,0 | 0,3 | 0,4 | 0,8 | 0,8 |
| % of discharges with recovery or improvement | 99,1 | 98,4 | 99,3 | 98,2 | 99,5 | 98,4 | 99,5 | 98, |

As it could be seen from the table in general the following tendency is characteristic for the study contingent:

- % of bed-day plan realization in the hospital of therapeutic profile remained stable during the study period from 2001 till 2004 – within 89,1% in 2001 and 91,0% in 2004;
- average treatment period in the hospital of therapeutic profile reduced from 9,2 in 2001 to 9,1 in 2004;
- % of urgent admissions and readmissions to the hospital during the study period of 2001-2004 remarkably decreased 9from 8,8 to 6,7 urgent admissions and from 1,7 to 0,8 readmissions).

In general across the country till 2000 the number of urban population admitted to hospitals was 17,1 per 100 urban population, however average treatment period of adults and adolescents was 16,8 bed-days /3/.

Positive changes in the figures of hospital services were achieved due to introduction of modern innovative diagnostic technologies, treating in clinical and paraclinical services.

This means that therapeutic hospital service continue to meet a demand under the substantial increase of effectiveness.

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TELEMEDICAL COMPLEXES SOLVING ISSUE OF ACCESSIBILITY AND QUALITY OF MEDICAL CARE

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Intensive development of telemedicine during last years is due to economical and technological improvements. Population mobility, knowledge expanding, increase of spectrum of diagnostic equipment and qualified medical specialists determine the increase market of telemedical services. The demand for such services increased due to creation of adequate telecommunication and data-processing system and technologies. Worldwide it is more that 190 telemedicine projects and the majority is in US. In Russia the first broad use of telemedicine was due to earthquake in Spitak and catastrophe in Ufa. Nowadays in Saint-Petersburg "Virtual doctor" clinical complex provide consulting services using electronic mail.

Telemedicine is a new trend at the turn of several fields, such as medicine, telecommunications, informational technologies and education. Our understanding of telemedicine as applied trend of medicine for development and practical use of distant medical assistance methods and exchange of specific information using up-to date communication facilities differs from american. It plays a great role in regard of territorial delivery of medical services sometimes solving vital health issues.

"The main purpose of telemedicine is creation of equal conditions for accessing help provided by qualified specialists not only for citizens of big cities but for people from distant rural regions, sailors, geologists, polar explorers, to those living in areas where emergency ambulance can not reach. A particular significance of distant medical assistance provision is in natural and man made disaster conditions" (O.S. Medvedev, 1998, 2001).

Our research aim was to develop and introduce telemedical complexes in multifield hospitals with following functions:

- § Links with network institutions, leading research and teaching medical institutions for distant discussion of public health issues;
- § Day-to-day management of emergency medical assistance;
- § Medical escort of VIP;
- § Informational and technical assistance for epidemiological well-being of adjusted population and administrative decision making;
- § Organizational and methodological provision of continuous and distant courses of physicians postgraduate training;
- § Ambulatory patient's history data transfer within network institutions.

One of the main issues raised with introduction of telemedical technologies is development of account and report documentations, development of legislative norms for telemedicine consulting, work management, personnel training. It is crucial to solve these issues to optimize work of telemedical complex, as well as to provide quality medical care and broad accessibility.

The main trends of hospital telemedicine are:

- § Diseases diagnostics
- § Identification of treatment strategies
- § Specification of diagnosis
- § Surgical operations conducting methods
- § Doctors behavior strategies in extreme situations
- § Distant observation of patients in critical state
- § Doctors consillium management

Currently, telemedicine in Kazakhstan is in a stage of introducing developments of distant methods of diagnostics and advisory assistance into health public health system. At the

moment we are far from other developed in this field country but undoubtedly, we will take our time to make input in world's telemedical science.

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MEDICO-SOCIAL ASSESSMENT OF PATIENTS WITH INFERTILITY IN PROGRAMS OF AUXILIARY REPRODUCTIVE TECHNOLOGIES

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According to international experts, number of infertile marriages in a world is about 15% [1, 2]. Abortions, venereal, gynecological diseases, and unsuccessful delivery are listed as causes of sterility. Sterility often forms as early as in a childhood, and sometimes it could be antenatal. Infertility is important medico-social problem as it leads to reduction of birth [3, 4, 5]. Solution to infertility, of course, may improve fertility indices of population. Besides that infertility is important socio-psychological problem as it often leads to socio-psychological discomfort of married couple, conflict situations in family, and induces growth in divorces.

There are varying methods of cure for infertility depending upon its multi-factor nature. Today in our country (Kazakhstan) as in other parts of the world, modern auxiliary reproductive technologies (ART) of treatment of infertile marriage used widely. Extracorporal fertilization (ECF) is an effective but expensive method among those in use. Using of ART in our country is regulated by the Law of the Republic of Kazakhstan "About reproductive rights of citizens and guaranties of its attainment"[6]. In vitro fertilization and embryo transfer are among the main methods for the treatment of many forms of female and male sterility.

We conducted a medico-social research of 419 women treated by method of ECF in Almaty City Center of Human Reproduction on a specially developed program. The results showed that main reasons of carrying out ECF were as follows: tubal sterility (60,6%), endocrine sterility (12,4%) and sterility of unclear genesis (11,2%).

Amongst the women treated by means of ART, more than half – 50,1% were inhabitants of Almaty city, 26,0% - women were from other cities of Kazakhstan, 9,5% lived in countryside, and 14,4% of women came to Almaty from other countries. The age group distribution of women who resort to extracorporal fertilization was as follows: less than 25 year old (12,4%), 25-29 (33,4%), 30-34 (32,3%), 35-39 (18,8%), and 40 year and older – 3,1% Table 1 depicts the social status of the women for those treated by ECF. Majority were white-collar workers (43,5%) and housewives (38,9%). Educational level of women was rather high, where – 53,9%

of women had high education and 24,1% - specialized in secondary education (Table 2). Marital status of women who participated in ECF program were as follows: 81,6% married, 15,5% - were in civil marriage, 1,7% were divorced, 0,7% - widowed, and 0,5% were single.

Table 1 – Social status of women participated in ECF program (% to the total)

| Social status | Respondents number | % |
|----------------------|--------------------|-------|
| White-collar workers | 177 | 42,2 |
| Blue-collar workers | 38 | 9,1 |
| Students | 26 | 6,2 |
| Entrepreneurs | 18 | 4,3 |
| Unemployed | 14 | 3,3 |
| Housewife | 132 | 31,6 |
| Others | 14 | 3,3 |
| Total | 419 | 100,0 |

Table 2 – Educational level of women participated in ECF program (% to the total)

| Level of education | Respondents number | % |
|-----------------------|--------------------|-------|
| Incomplete secondary | 2 | 0,5 |
| Secondary | 63 | 15,1 |
| Specialized secondary | 101 | 24,1 |
| Incomplete high | 27 | 6,4 |
| High | 226 | 53,9 |
| Total | 419 | 100,0 |

Table 3 – Distribution of women participated in ECF program depending on financial status (% to the total)

| Financial status | Respondents number | % |
|----------------------------|--------------------|-------|
| Lower than moderate means | None | – |
| Moderate means | 292 | 69,7 |
| Higher than moderate means | 89 | 21,2 |
| High level of income | 38 | 9,1 |
| total | 419 | 100,0 |

Table 4 – Distribution of women participated in ECF program upon housing conditions (% to the total)

| Housing conditions | Respondents number | % |
|--------------------|--------------------|-------|
| Satisfied | 102 | 24,3 |
| Bad | None | – |
| total | 419 | 100,0 |

Not all women may let themselves into serious financial expenses related to ECF. Those who were interviewed; 9,1% had high financial level of life, 21,2% - higher than middle and 69,7% - middle level (Table 3). Two thirds of patients (75,7%) lived in good housing conditions and only 24,3% - in satisfied conditions (Table 4). There were no women who participated in ECF program with low material level of life or lived in bad housing conditions.

Single application of extracorporal fertilization not always leads to a success. Those respondents whose pregnancy began with single attempt was 73,3%. About 15,0% already had one unsuccessful attempt of treatment by ART; 9,1% - two attempts, and 2,6% - three attempts.

Women with primary sterility amounted 39,4%, with secondary - 60,6 %. Among that in the anamnesis of 5,9% there was fetal death.

Increasing role of religion in social life of community requires study population lifestyle from this perspective. It is determined that among the women participated in ECF program just 15,3% were atheists, 78,3% of them thought themselves as believers, and 6,4% - deep believers. Almost quarter of treated people (24,2%) asked a permission from religious figures before they went to ECF. In other words ethical and religious aspects of using the modern reproductive auxiliary technologies require further research. It should be considered at the start of the program.

Only 54,9% addressed to antenatal clinic regarding the sterility first time, whereas 12,8% addressed to known physicians, and 6,4% to private practicing physicians, 6,4% - to the general practitioners, and 19,5% - to another physicians. Part of the women tried to cure sterility outside of specialized facilities – 19,8% addressed to healers, «grannies», 8,8% were cured independently according to friends' advices, 3,6% addressed to extrasensory individuals.

Thus, women with sterility, using the ECF, have features of medico-social characteristics. Most often they are women in the age group of 25-35, employed or housewives, with high level of education, believers, in lawful matrimony or in civil marriage, financially successful, living in good housing conditions.

GENDER ANALYSIS OF ADOLESCENTS' SELF-ASSESSMENT OF HEALTH IN ALMATY CITY CERTAIN RESULTS OF MEDICAL AND SOCIAL INVESTIGATIONS

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Health is the important societal resource and health of youth is one of the main indicators that characterize a whole society [1,2]. The knowledge of a health status of young people helps to evaluate the capacity to cope with life difficulties and identify risk groups. Adolescence is a period when both sexes experience changes. As a result there is a need to investigate health attitude forming in adolescence in view of gender distinctions for revealing vulnerable youth and differential approach for development of various preventive programs for adolescents.

Research goal: gender analysis of subjective assessment of adolescents' (11-16 years) state of health in Almaty city.

Materials and methods

A survey of 3261 pupils in the age of 11-16 years was conducted within WHO Health Behavior in School-aged Children (HBSC) project by WHO questionnaire adapted for Kazakhstan. Nested sampling had been chosen where nested whole was the class of a secondary school. Mathematical processing was done using SPSS statistical software.

Results and discussion

Presented data are based on 3 subjective indicators: health self-assessment, subjective complaints, satisfaction with life.

Health self-assessment. 84,4 ±2,17 % of boys and only 70,3±1,9% of girls considered themselves “absolute healthy” and “healthy in general” in the age of 11-16. “Not completely healthy” are 15,6 ±1,6% of boys and almost twice girls 29,7±1,9%. Therefore, there are gender

differences (reliability of gender differences is $p < 0.01$). During maturing the health self-assessment by adolescents of Almaty is worsening (reliability of age differences for girls and boys $p < 0.05$).

Subjective complaints. Frequency analysis of subjective complaints of Almaty adolescents showed that girls complain for health more often and its level increases with the age. There is a direct connection of a weak degree between revealing of 2 or more complaints per week with increase in age both for boys and at girls (reliability of age differences for girls and boys is $p < 0.01$).

Satisfaction with life. It was revealed that number of adolescents unsatisfied with life is increasing with age ($p < 0.01$) in particular at girls. Gender differences ($p < 0.05$) during maturing period become more pronounced. There is correlation dependence of medium degree between health self-assessment and life satisfaction (Spirmen coefficient 0.305, $p < 0.01$).

Thus, more adolescents consider themselves healthy and don't have multiple complaints, one third are not "so healthy" though. Therefore, opinion that adolescence is a period of well-being of health is misleading. Differences can be explained by biological factors (onset of pubertal period, sexual differences), as well as greater stress experienced by girls due to appearance, school and public attitudes. On the other hand the doctrine "guys are not crying" can be a reason for low complaint presentation including for health. These explanations are reflecting processes acting in parallel interacting with each other. Gender differences can not be explained only by natural physiological factors but others influencing state of societal health. Low self-assessment of health state correlating with low life satisfaction by 15-years' girls bring them to risk group during transition from the teenage period to adult that should be taken into consideration while developing preventive and social programs for teenagers.

CONTEMPORARY ISSUES IN DIAGNOSTICS AND PREVENTION OF CARDIOVASCULAR DISEASES.

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Cardiovascular diseases (CVD) still remain as main cause of invalidity and mortality. On basis of CVD there is atherosclerosis, at which cholesterol, other lipids, cellular elements, and fibrin are accumulating in the arteries' walls forming plaques, limits a bloodstream. Here dislipidemia plays significant role, especially increased cholesterol level of low-density lipoproteins (CH LPLD) and cholesterol of very low-density lipoproteins (CH LPVLD) [1]. Also dysfunction of vessels endothelium plays role of no small importance. There is reason to suppose chronic, sub-clinic inflammation of vessel endothelium, which characterizes by activation and proliferation of endothelium-derived and plain-muscle cells with formation of big number of antiphlogistic mediators, plays important role. Marker of inflammatory process is C-reactive protein (CRP). Normally it equals 0,8 -3.0mcg/ml [2].

For the last years results of clinic-epidemiological research let to revise a role of inflammation itself and its markers in primary and secondary prevention of CVD, and also to revalue an importance of some «classic» cardiovascular risk factors (RF).

Research from USA and Europe testify, that persons with primordially high level of CRP in plasma had complication risk of coronary heart disease (CHD) 1,7 times as higher than persons which CRP level is not high in general population. Plasma's CRP level of middle age men was reliable predictor of development of fatal and non-fatal myocardial infarction (MI), ischemic

stroke and atherosclerosis of peripheral arteries (arteries of lower extremities). Increased CRP level of women at post-menopause period was predictor of mortality from CHD, non-fatal MI and ischemic stroke.

It is considered that even high, normal level of CRP is bad prognosis sign [2]

In connection with above listed data there is growing need of determining the CRP level, and also coefficient of atherogeneity (CA) of patients. Increasing of CA to 4 units says about rising of complication risk of atherosclerosis: MI, stroke, intermittent claudication, thrombosis. CA is calculating by formula:

$$CA = \frac{GCH - CH\ LPHD}{CH\ LPHD}$$

Normal indexes of lipids in blood serum:

General Cholesterol (GCH) - 3,2-5,2

Triglycerides (TG)

Cholesterol of lipoproteins of high density (CH LPHD) > 1,0 mmole/l

Cholesterol lipoproteins of low density (CH LPLD) - 1,3-3,3 mmole/l

Cholesterol lipoproteins of very low density (CH LPVLD) - 0,1-1,0 mmole/l

According to European Association of cardiologists, from 1998 purposeful cholesterol level is < 5,2 mmole/l, and LPLD < 3,0 mmole/l.

Upon recommendation of the American association of heart purposeful level of cholesterol is < 4,6 mmole/l, and LPLD < 2,6 mmole/l.

Nowadays cardiologists realize that process atherogenesis might be inhibited and even bring on involution of atherosclerotic plaque that is a goal of cardiologists in the prevention of CVD.

Cure success depends on whole complex of factors: lifestyle, nutrition type, correct selection of treatment, especially lipidoreducing therapy, which is urgent to get successful achievement in atherosclerosis treatment.

Now the most new lipidoreducing drugs are - statins. It's included to «gold standard» of CHD cure.

For discovery of this group preparation scientists Brown and Golbstein won Nobel Prize, and discovery itself was high spot in cardiology of the end of twentieth century.

Statins for atherosclerosis is the same as penicillin for infectious diseases. (Roberts,1996)

Statins do not cure hypercholesterolemia, only let control it. That's why treatment by means of theses preparations should be provided for life and the earlier the better. After getting good effect there might be developed resistance. In such cases it's necessary to take a break for a month (drugs holiday) with following renewal of treatment. Sometimes it has been enough to change one preparation to another. It is recommended to use statins for all patients with atherosclerosis. For example, at once after attack of acute ischemic heart disease (acute coronary syndrome), acute abnormality of cerebral circulation, and at acute MI statins must be prescribed always, even if there is low level of cholesterol. Also statins are recommended to patients after revascularization surgery, and at secondary forms hypercholesterolemia (hypothyroidism, nephrotic syndrom, bile duct obstruction) it's obligatory to treat main disease with maintenance of appropriate diet.(3) Statins' favorable effect on outcome of CVD connected with normalization of lipids level in blood, also with number of other (more earlier) «vascular effects». These effects are called as pleothropic or non-lipoid. It includes effect on endothelium-derived dysfunction, vasomotorial function, inflammation processes at atherogenesis, and on hemostasis. (1) Non-lipoid effects have extremely big importance positively effecting on adhesion of platelets. At prescription of statins, reduction of CRP, proliferation of plain-muscle cells and stability of operculum of atherosclerotic plaque underline positive effect of statins on atherogenesis (1). It has been proven that, anti-inflammatory effect of statins is comparable with antiinflammatory activity of indometacin, but nevertheless change of CRP level under the influence of statins is still not enough studied, and remains being important.

Considering that, with goal of CVD prevention and cardiovascular risks it's necessary to:

1. To provide educational work on radio, on television, in newspapers; to organize training programs «Cardio Schools» in medical facilities
2. Everybody elder than 20 must define own level of general cholesterol and lipoproteins of high density every 5 years. It's necessary to determine lipid profile in case of increasing GCH > 5,17mmole/l and reduction of LPHD < 1mmole/l; to provide preventive practices.
3. It is necessary to train population to prevention measures of abnormality of lipid metabolism (to keep a diet, work regimen, rest, moving regimen, to avoid stress situations, struggle against obesity and others)
4. Timely convinced treatment of signs возникшего атеросклероза and diseases lead to it (pancreatic diabetes, hypothyroidism, kidney disorders, cholestasis, chronic alcoholism) by statins.

DETECTION OF GENETIC AND SEROLOGIC MARKERS OF VIRAL HEPATITIS TYPE B AND TYPE C IN CONDITIONS OF MULTIPLE-PROFILE CLINIC

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Every year growing evidence of data testifies that viral hepatitis occupy one of the leading places in infectious pathology of human beings, and it represents a real challenge to medical science and practice in all over the world.

Use of immune-enzyme analysis (IEA) in indication of serologic markers of virus of hepatitis type B (HBV) and virus of hepatitis type C (HCV) significantly enriched laboratory-diagnostic process on study of serum hepatitis. However it is the laboratory method revealing mediate reaction of immune system of man for virus adoption. Only tests for HBsAg and HBe Ag might be considered as evidence of immediate detecting of viral fragments. At that in the publications of some authors [1,2] there is marking that HBeAg characterizes high replicative capacity of HBV, while HBsAg mustn't be considered as evidence of replication. In case of HCV infection replication markers are antibodies of M class to cor-protein HCV.

Introduction of polymerase chain reaction (PCR) method into the daily laboratory practice gave possibility to use direct laboratory method for immediate detection of agents' genome of viral hepatitis.

The goal of our work is determination of detectability's frequency of the serologic (IEA) and genetic (PCR) markers of HBV and HCV among the patients addressed for inpatient and ambulatory care to multiple-profile clinic.

Materials and methods. Plasma and blood serum of patients served as research material. PCR-analysis for HBV and HCV was provided on reagents of brand «Ampli-Sens» produced by «Interlabservice ltd» (Moscow). DNA/RNA was defined from blood plasma by means of set «Ribo-sorb»; there for getting complementary DNA from matrix of RNA was used set «Reverta-R». For amplification there was used set «AmpliSens HBV-470s/VKO-770» and «AmpliSens HCV-240/VKO-440». Amplification was provided on thermocycler «GeneCycler» Bio-Rad. Amplification products were analyzed by method of electrophoresis considering results on system «Gel-Doc» Bio-Rad.

Serologic markers were detected by means of providing the immune-enzyme analysis of blood serum on semi-automatic Rider «Stat-Fax» (USA) using test-systems of «IBL» and «DAI» (USA), and on automatic electrochemiluminescent analyzer «Elecsys 2010» Roche using

reagents of the analyzer. For detection of serologic markers of hepatitis type C there were used sets with summary antibodies.

Results and discussion. During one year period, there were over 4.5 thousands blood tests for presence of specific markers of viral hepatitis type B and C by PCR-method (1520) and IEA-method (3007) in laboratory. Majority part of the examinations was provided for patients with referrals to examination (56.5%), and to different surgical operations (34.1%), only small percent of patients – with diagnosis chronic viral hepatitis type B or C (9,4%).

From the number of examined, the presence of hepatitis type B and C viruses' nucleic acids using method of PCR, 122 patients had positive results. Detection frequency by this method was 8.3%, where 11.1% - hepatitis type C viruses and 5.4% - serum hepatitis viruses.

Patients examined for the presence of serologic markers by means of IEA method, and there were 414 positive results. Frequency of detection by IEA method of serum hepatitis was 11.6%, and hepatitis type C was 23.4%.

Specific gravity hepatitis type C detection dominates in both methods of examination. The data presented on detection of genetic and serologic markers of viral hepatitis by methods PCR and IEA are shown in the Table 1.

Table 1. Detection of markers of viral hepatitis type B and C by PCR and IEA methods

| # | Markers names | Total conducted studies | Positive results | Detection % |
|----|---------------|-------------------------|------------------|-------------|
| 1. | IEA HBV | 2407 | 279 | 11,6 % |
| | HBsAg | 1078 | 105 | 9,7 |
| | HBsAb | 332 | 45 | 13,2 |
| | HBeAg | 250 | 14 | 5,6 |
| | HBeAb | 234 | 44 | 18,8 |
| | HBcAb | 268 | 53 | 19,7 |
| | HBcAb IgM | 245 | 18 | 7,3 |
| | IEA HCV Ab | 575 | 135 | 23,4 |
| 2. | PCR HBV | 817 | 44 | 5,4 |
| | PCR HCV | 699 | 78 | 11,1 |
| | | | | |

Among serologic markers of HBV there are dominating positive results of antibodies (HBcAb, HBeAb, HBsAb), and detection of antigens (HBsAg, HBeAg) numbers not great percent, that testifies mainly patients are addressing with chronic hepatitis type B more, than acute. Detection of HBV DNA by PCR method testifies about “viremia” and shows sharpness of process in 5,4% of cases, that concurred with detection of IEA-marker HBeAg in 5,6%. Using both methods detections of acute viral hepatitis type B are same.

Serologic markers of hepatitis type C – HCVAb were found with frequency 23,4%, and it is about twice higher, than PCR results for detection of RNA HCV – 11,1%. PCR negative results for RNA HCV detection against a background of the positive tests for HCVAb by IEA might be consequence of low concentration of virus or it reflects presence of antibodies in blood of patients who had acute hepatitis. Nowadays there are defined two variants of hepatitis' chronic course – with high and low replicative virus activity. More often the virus RNA is to be detected in liver, than in blood plasma and serum, at patients with chronic hepatitis type C with low level of viremia.

Conclusions. The data testify about moderate infection of patients by viruses of hepatitis type B and type C. At the moment of examination most of the patients who had chronic form of the diseases, only at 5,6% were detected acute disease course. Because of the low viremia at patients with chronic form hepatitis they were not always detected DNA, RNA of viruses by PCR-method. This indicates the necessity to use more highly sensitive molecular-genetic

methods including quantitative methods in genodiagnostics of viral hepatitis, and also in spite of blood plasma and serum to study of patient's liver tissue, in which may be due to localization of virus.

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COMBINED USE OF PHONOPHORESIS WITH HYDROCORTIZONE OINTMENT AND ELECTROPHORESIS WITH HEPARIN IN TREATMENT OF CHRONIC BRONCHITIS AND BRONCHIAL ASTHMA

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Goal of research: Combined use of electrophoresis of heparin and phonophoresis with hydrocortizone ointment in treatment of patients with diseases of chronic bronchitis and bronchial asthma.

Urgency: Chronic obstructive disease of lung (COPD) disease has steady progressive character and can be described by partly irreversible limitation of air stream that is generated by inflammatory reaction of pulmonary tissue to stimulation by different pathogenic particles and gases.

Morbidity and mortality from COPD ranks 4th and continues to increase all over the world[1]. This disease is amongst the reasons of chronic morbidity and mortality in the world for age group older than 45. According to research results by World Health Organization and World Bank, COPD will keep 5th place in rankings for common morbidity by 2020. The economic and social implications of COPD are immense where major part of both direct and indirect expenditures of society consumed by it [2]. Hence, it significantly influences quality of life and life expectancy of patients.

Phonophoresis with hydrocortizone ointment regenerates drainage function of bronchus, strengthens drainage function of the bronchus, lympho- and blood circulation. Besides that it has anti-inflammatory and desensitized effect.

The procedure is conducting paravertebrally and at 5th-6th intercostal spaces (0,2wt\sm2 by 3 minutes, the treatment consists of 10-12 procedures. Electrophoresis with heparin prevents degranulation of mast cells, increases activity of alveolar macrophages, has anti-inflammatory action with antitoxic and diuretic effects, reduces pulmonary hypertension, and promotes discharge of sputum [3].

Main characteristics of heparin at chronic bronchitis and bronchial asthma are:

1. Presence of reversible bronchial obstruction,
2. Pulmonary hypertension,
3. Respiratory compromise,
4. Active inflammatory process in bronchus,
5. Syndrome of Disseminated Intravascular Coagulation, and

6. Sizeable increasing of sputum's viscosity.

Electrophoresis with heparin (5000 units) is prescribed for area of chest, with course from 7 to 10 procedures.

Contraindications to heparin are hemorrhagic syndrome, hemoptysis, stomach ulcer what is considering at prescription of this procedure [5]./6/

Results:

At the combined use of cure on 5th-6th day, the health status of patients was better, breathlessness was over, and on the 10th day patients indicated significant improvement.

There were 140 patients under observation and the results are shown in Table 1
Cure results of patients with chronic bronchitis by different methods

Table 1

| Types of cure | Quantity of patients, n | Males | Females | Significant improvement | Improve ment | Without effect |
|---|-------------------------|-------|---------|-------------------------|--------------|----------------|
| Phonophoresis with hydrocortizone ointment in combining of electrophoresis with heparin | 46 | 24 | 22 | 38 | 5 | 3 |
| UHF El.appar. + electrophoresis with 3% KJ\-\ | 52 | 32 | 20 | 24 | 20 | 8 |
| ДМВ+inhalations with broncholithic compound | 42 | 28 | 14 | 22 | 18 | 2 |

Conclusion: Using of phonophoresis with hydrocortisone ointment and electrophoresis with heparin in clinical practice shows that after first procedures there are indicated considerable positive shifts at 75% of patients. That contributes to reduction of cure periods of patients with chronic bronchitis and bronchial asthma.

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IMPROVEMENT OF THE CONTROL OF BONE RECLAIM MATURITY ASSESSMENT UNDER THE COSMETIC CORRECTION OF LOWER EXTREMITIES WITH THE HELP OF ULTRASOUND DIANOSTIC.

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Traditional radiography, widely used for control of bone reclaim maturing, practically has no alternatives due to its prevalence and universality. Radiation exposure of the patients and medical staff limits the number of necessary pictures during the treatment process. Modern methods of examination such as computer-aided tomography and nuclear magnetic resonance diagnostics are the most effective in bone tissue examination; however low prevalence and high cost serves as limiting factors for their wider application.

Appearance of modern ultrasound instruments that have high-frequent wideband sensors with high density of elements, which provide highest dotted permission of diagnostic images, enabled the assessment of the state of bone tissue and monitoring of the treatment. Ultrasound examination is more accessible, harmless for patients and could be done repeatedly during the treatment.

Comparative analysis of the application of ultrasound and roentgenologic examinations during the control of reparative ontogenesis under the cosmetic correction in the zone of shin-bone osteotomies was done by us.

Materials and Methods

Overall 75 patients were under the observation, to whom the cosmetic correction of lower extremities because of shank bone deformation was done. Out of this number 35 patients were taken into the study of comparative analysis of the implication of roentgenologic and ultrasound examinations with in order to control the reparative osteogenesis.

Results and Discussion

Immediate results of the treatment were assessed by the data of clinical, roentgenologic and ultrasound examinations.

Comparative assessment of roentgenologic and ultrasound examination of bone reclaim not only showed positive influence of dielectric bush on bone reclaim maturing but also enabled to judge on bone reclaim maturity with the help of ultrasound examination. Taking into account the simplicity, accessibility of ultrasound examination it can find broader implication in traumatology and orthopedy, and for observation of the dynamic of bone reclaim maturing in orthopedy.

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ASSESSMENT OF STATUS FOR GENERAL VENEREAL DISEASES (SYPHILIS, GONORRHEA) IN KYRGYZ REPUBLIC

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Change of political system, social shocks, instability of economical and psychological processes, appearance of refugees, homeless persons, unemployed, prostitutes, reduction in level of educational work among population – This is far from full list of factors promoting to dissemination of sexually transmitted infections (STIs). These difficult conditions in society are against the efforts of and healthcare facilities to decrease STIs, more specifically curtails the dispensary-preventive work, efficiency of detection the patients with venereal diseases and their contacts [2,3,4,5,7,8].

Since 1991, in Central-Asian republics syphilis sickness rate started to grow sharply. In particular for period from 1991 till 1997 syphilis morbidity increased more rapidly, and since 1998 there is a decreasing trend. Thus, in 1999 there were 231,4 new registered cases per 100000 population in Kazakhstan, and 146,3 cases per 100000 in Kyrgyzstan. The most unfortunate intensity of patients with syphilis were in capitals and oblasts where high percent of urban population exist [1,8].

The purpose of this article is assessment of status for main venereal diseases in Kyrgyz Republic and suggestions for improvement for preventive actions.

Material and methods. Morbidity statistics from Ministry of Health of Kyrgyz Republic provides the source of data. Statistical analysis were conducted on generally accepted methods of social-hygienic research.

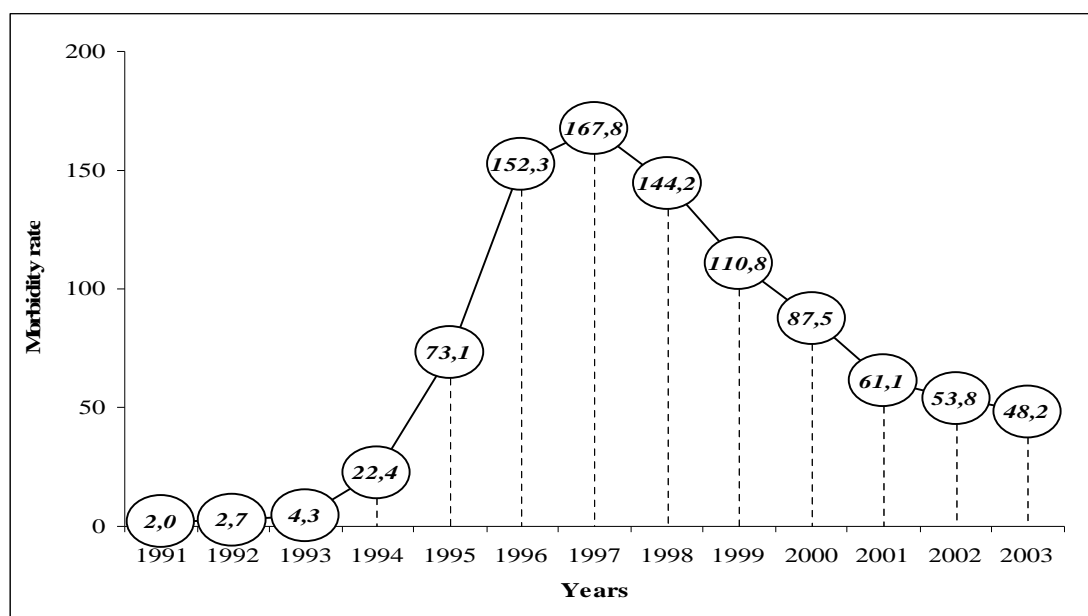
Results and discussion. During the past few years in our republic, range and content of family doctors' services are significantly enlarged; their duties include health promotion. There was a confusion for services in separate population categories while rendering services on principle of family practice with accentuating diseases prevention and health promotion of registered population that facilitated to quality improvement healthcare services [6].

Nevertheless, level of yearly registered STIs morbidity stayed high. In Kyrgyz Republic syphilis's morbidity was 48,2⁰/0000, and gonorrhea – 27,4⁰/0000 in 2003.

Considering importance of STIs spreading in the republic, which had signs of epidemic proportions in the middle of 90s, in our view, it is scientifically interesting to conduct a retrospective and comparative analysis of STIs morbidity for period 1991-2003, in the republic and in Bishkek city. BishkekI is a big megapolis with pronounced infrastructure and development of established networks in the area of sexual business with involving social categories of inadapted and youth of scanty means disposed to asocial behavior.

Analysis of syphilis morbidity of population for period 1991-2003 in the republic indicates worsening of epidemic situation in 1996-1997, but reduction of morbidity level in ensuing years (Picture 1).

During period of epidemic growth, syphilis morbidity in 1997 for the republic was 167,8 for 100000 population, while the index in Bishkek city was 255,4 for 100000 population. That year the average gonorrhea infection morbidity was 32,9 for 100000 for the republic and 18,5 per 100000 in the Bishkek city (Figures 2 and 3). With that, in 1997 value of the syphilis morbidity index in Kyrgyz Republic was 88 times higher than in 1990.

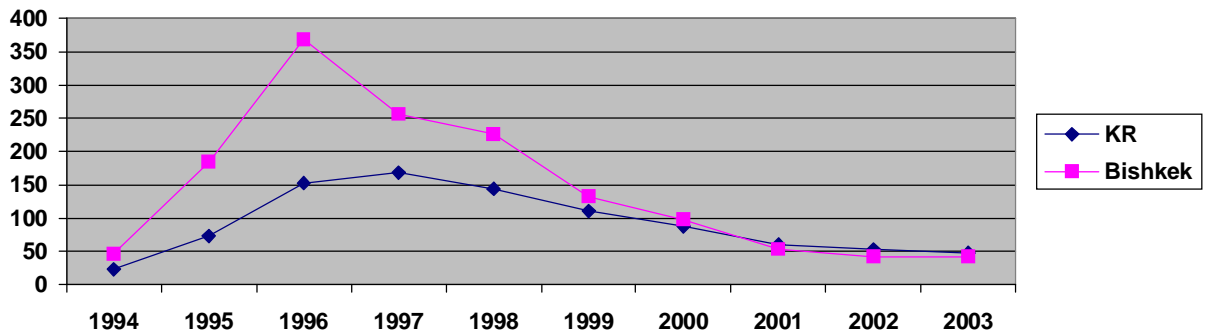


Picture 1. Dynamic of syphilis morbidity in Kyrgyz Republic on years (number of diseases registered first time for 100,000 of population).

The State program on prevention HIV-infection/AIDS, STIs and infectious diseases for 2001-2005 was approved and passed by decree of the government of Kyrgyz Republic from 13 December of 2001 №785; programs on struggle against the STIs were directed to early detection of patients (wide «vassermanization» in medical facilities, repeated examination of contingents in maternity leave) let to decrease the level of population sickness rate. However, in spite of decreasing syphilis morbidity level in 2003 (in comparison with 1997; 3,5 times higher in the republic, and 6 times higher in Bishkek) high rates of syphilis morbidity nevertheless are sustained by growth of unemployment, intensive population migration, change of usual lifestyle, prostitution, drug addiction, spreading of sexual services market. These conditions express the status of infectious pathology of population, particularly the level of sickness rate for socially passed infections.

In the Bishkek city the largest index of syphilis morbidity was registered in 1996. In comparison to 1995 (184.5⁰/₀₀₀₀), with 368,3⁰/₀₀₀₀ in 1996, the increase in morbidity rate was twice more than in 1995 (Picture 2).

Such great increase might be explained by migration of population from the regions to cities and destroying of functioning mechanisms of public control existed before. It's should be noted that primordially since 1994 Bishkek city morbidity were higher, than republic level. Ratio of patients of Bishkek city and oblasts of KR amounted 1:2,2, i.e. 50% of patients accounted for Bishkek. Only in 2001 the process of stabilization occurred, and the index per 100,000 population in Bishkek was lower than the republic level– 61,6, in Bishkek –52,6, in 2002 republic index – 53,8, in Bishkek – 41,3, in 2003 the republic – 48,2, in Bishkek – 41,8 (Picture 2). More proper explanation of this reduction realized by third stage of “Manas-1” program in 2001, and regulation of government of Kyrgyz Republic on prevention and struggle against the STIs. Considering commonly accepted opinion that syphilis is marker of STIs, and increasing of that index's value testifies bad epidemic situation.



Picture 2. Dynamic of syphilis morbidity for 100,000 of population in Kyrgyz Republic.

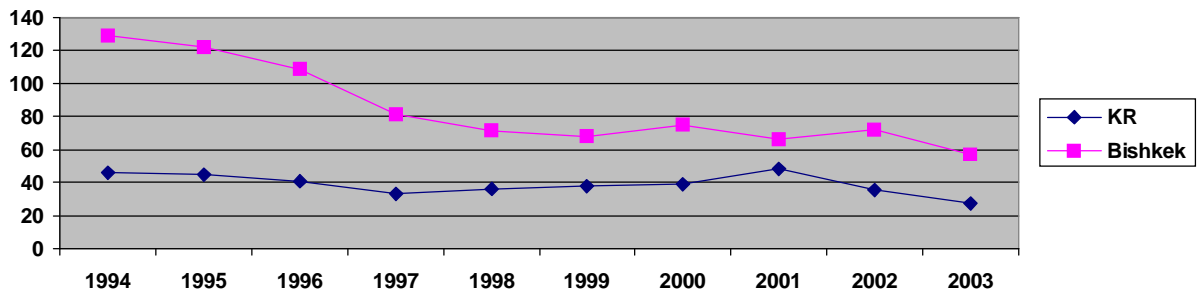
In our view, prerequisite to STIs' epidemics development is also emanates from growth of gonorrhea infection which was observed in 1994. At that time, the morbidity rate of gonorrhea amounted 46,1 per 100000 population in the republic, and 128,8 per 100000 population in Bishkek (Picture 3). At the same time, each second patient with gonorrhea all over the republic lived in Bishkek. This underlines importance of megapolis effect in the spread of STIs in connection with this city is not only culture and education center, but also the city where vulnerable groups of population are concentrated.

During a 10-year period (1994-2003) of analysis, morbidity rates of gonorrhea have risen four times as much in the republic and seven times in Bishkek, this provides the is evidence of primordially high level of the pathology.

Rather clearly formed correlation between morbidity dynamics of syphilis and gonorrhea observed during the last two decades in Kyrgyzstan and in other CIS countries, received its own attention for sickness rate and this is supported by our analysis. Ratio of morbidity level of syphilis and gonorrhea for the republic corresponds to 1:2 in 1994. Since 1995 we observe an inverse dependence 1,6:1, in 1996 - 3,7:1 and in 2003 the proportion is 1,7:1. If we look at the graphical picture gonorrhea morbidity from 1994 till 2003, it indicates that the curve is fluent without evident peaks and abrupt changes (Picture 3).

Analyzing the situation on gonorrhea we see the level is high, at that as with syphilis absolute index in Bishkek exceeds republic level data. At primordially high level 46,1 per 100,000 population in 1994, there is a decrease until 1997 – 32,9, and since 1998 – it is rising from 36,3 to 48,3 per 100000 population in 2001. In 2003, a reduction of morbidity rate to 27,4 ⁰/₀₀₀₀ is indicated, that is 1,7 times as less than index of 1994 (46,1 per 100000 population), in other words the rate fall about 3,9% for the republic, and 7,25 for Bishkek. Assessing the situation of Bishkek, we need to mark that primordially in 1994 was peak of morbidity (128,8 ⁰/₀₀₀₀) that is 2,7 times as higher than the index of republic (46,1 ⁰/₀₀₀₀), i.e. every other patient with gonorrhea lived in Bishkek.

Since 1994 there was a constant reduction of sickness rate until 1999 (67,9). Since 2000 we mark rising of morbidity level to 74,7; 1,1 times as much in comparison to 1999. This index in Bishkek city exceeded common republic level twice as much, i.e. one third lived in Bishkek. Since 2000 sickness rate of gonorrhea acquires undulating character with falls to 66,1 in 2001 and rising to 71,9 in 2002, and fall to 56,9 ⁰/₀₀₀₀ in 2003 again. At that absolute data of Bishkek city in 2003 exceed the republic level twice as much. Situation is continuing to remain as very unstable.



Picture 3. Dynamic of gonorrhea sickness rate for 100,000 of population in Kyrgyz Republic.

Explanation of change in phenomenon of ratio of patients with gonorrhea and syphilis along with absolute increasing of patients with syphilis (2,1 times as much in 2003 in comparison to 1994). There are other factors that influence the process for the epidemic process: treatment in profit structures and other medical facilities without official registration of patients, absence of dynamical observation of them, uncontrolled use of antibiotics by patients with STIs.

It is important to mention that gonorrhea sickness of urban inhabitants are twice the rate of the rural areas. This aspect reflects not only migration processes of population (city – village), but also testifies necessity of conducting dimensioned screening of patients with STIs (especially risk groups) in conditions of big cities and oblast centers.

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