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**METHODICAL BASIS OF THE SYSTEM OF MONITORING OF THE
GOVERNMENTAL PROGRAM ON HEALTH CARE REFORMING AND
DEVELOPMENT OF THE REPUBLIC OF KAZAKHSTAN
FOR 2005-2010**

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The informational-analytical system of monitoring of the activities of health care organizations was developed, aimed on evaluation of the rate of achievement of final results of the health care system. The system of monitoring and evaluation enables to: assess the effectiveness of health care system; measure the results of health care reforming and development; predict the medical-social effect under the managerial decision making; justify the strategic directions of the field development; conduct ranking score of health care organizations. The methodical basis of the system of monitoring and evaluation is the situational analysis and prognosis on the base of goal-oriented approach to information appraisal.

The specific feature of health care system is that the results of its functioning have no adequate form of expression: a work result doesn't take the material forms, that could be amenable to straight statistical recording, but they present a useful effect which couldn't be separated from the services rendering activity itself.

Traditionally the functioning of the field is judged mainly by the amount of produced expenses (financial, labors, material and etc.) However, evaluation of the effectiveness of health care system activities have to be based on the assessment of the final result, which is presented by *population health improvement*, as it is reflected also in the Governmental program on health care reforming and development of the Republic of Kazakhstan for 2005-2010, ratified by Decree of the President of the Republic of Kazakhstan from 13th of September, 2004, № 1438.

The development of the methodical basis of measurement and evaluation of population health status is connected with overcoming of great number of difficulties, due to the complexity of the object of study itself. It should be mentioned, that the definitions and assessment of health have been changing during the whole history of health care. Currently, we have to acknowledge the absence of the generally accepted unified health definition. In the literature, devoted to various aspects of health, there are great number of definitions of this category, based on different approaches and criteria. However, plenty of definitions directly make difficulties to the successful fulfillment of the objective on investigation and evaluation of population health status.

In the XX century the social determinacy of health was acknowledged, which is strengthened by WHO constitution: "Health is a state of complete physical, mental and social

well-being and not merely the absence of disease or infirmity”. By this definition it is well recognized that health problems should be approached from broad social positions, and health protection is not under the competence and responsibility of the health care organizations only. Health securing and promotion is the joint responsibility of the government, employer and citizen. It is realized by intersectional cooperation, active participation of the population and by development of the appropriate technologies by health care field.

It should be taken into account, that population health indicator are very inertial in dynamics. As a result, the unbiased certain time lag is existing between the conduction of actions and their effect. Typically, if active actions are undertaken in the current year, than the sizable results should be expected in subsequent years. More sensitive and rapidly responding for changes are the indicators of intermediate result (I level). Than in this case it should be logical to accept the measures of health care system activity as the indicators of the II level, and quantitative parameters of resources allocated for health care system – as the indicators of the III level. Such indicators, constructed on cause-effect relations, enable to determine the key points, influence on which will lead to achievement of stated goals, and simultaneously to measure such influence.

On a whole, the developed system of monitoring and evaluation of the rate of achievement of the final results of health care activities, presents by itself the “tree” of goal achievement. On each level of the “tree” of goal achievement for monitoring of each indicator the corresponding effectiveness characteristics are given. In accordance with WHO recommendations each of the indicators is correlating with one of the four fundamental functions of health care system. Such an approach allows constructing the chain, which connects the chosen goals of the system with primary input, and enables to take managerial decisions on the basis of carrying out process of monitoring and evaluation of results of the activity.

At that, for each level of management (national, regional, organizational) the most relevant indicators are determined. So, on the national level equally important are the indicators of all four final goals and 4 functions of health care system; on the regional level – the most important are the indicators of the functions of services provision and supervising, on the second place are the indicators of resources generation, and than the indicators of financing function are following. As for the level of organizations – the main indicators are those of services provision.

The system approach allowed to build a chain that brings together chosen goals of health care system with primary input, and to make managerial decisions on the ground of the system of monitoring and evaluation being carried out. At that, part of indicators and characteristics have are directly correlating with final results of activity, while the input of the other indicators is a mediated one.

The following main criteria were taken into consideration in selection of the indicators – the indicators have to:

- be directly connected with the processes and be chosen as a result of reliable sample from the appropriate population groups, which are influenced by certain interventions;
- be based mainly on the system of statistical records and existing forms of accounting documentation;
- measure what it should to measure;
- be accessible for independent evaluation and;
- correspond to inquiries and possibilities of the user;
- have a clear formulation, that exclude ambiguous interpretation;
- be quantitative and qualitative, technically reliable, efficient and not expensive.

The informational database for defining the indicators of the first, a second and third level is presented mainly by data from the state statistics. The data of sociological researches is serving as an initial material for creation the qualitative characteristics. For calculation of some parameters the temporary form is introduced.

The attempts were taken before to develop, systematize and generalize goal-oriented indicators, aimed to gain the final results, and creation of the systems of monitoring and evaluation of the realization of the Governmental program on health care reforming and development of the Republic of Kazakhstan for 2005-2010.

The given system of monitoring and evaluation of health care system activity is universal and comprehensive; build on stage (cascade) statistical analysis of health care system functioning on the base of invariant principles. The fundamental difference of the suggested approach is selection of the one indicator of the global goal, 15 goal indicators and system logical-methodological analysis of their formation by the means of 42 indicators of the I level, 19 – II level, 21 – III level. Determination of the rate of achievement of final results of health care organizations on the national level is followed and evaluated by 70 indicators and parameters, on the level of regions – by 93 parameters and on the level of medical organizations – by 61 parameters.

JUSTIFICATION OF THE GOAL-ORIENTED INDICATORS OF HEALTH CARE ORGANIZATIONS ACTIVITY

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Typical methodological approach used in the appraisal of population health status is application of various informational sources, being developed in the framework of statistical records. They include the data on life expectancy, mortality, morbidity, population physical indices and etc.

Life expectancy – is a complex indicator, that for the some extent shows generalized population health status depending on influence of numerous factors.

When examining methodic of calculating a life expectancy it could be marked that it takes into consideration a number of alive and died people at definite time intervals. The number of alive people is given by birth rate, and number of died people is reflected in the population mortality rates. Health care system does not have reliable and stable key factors of influencing on the increase of population birth rate.

On the other hand, prevention of premature mortality is one of the main targets of health care, that have necessary resources for this. Health care have influence on life expectancy and thus on population health status by the means of its activity that influencing population mortality rate.

Realizing that it is impossible to bring such complex definition as population health to some definite quantitative characteristic, nevertheless mortality index is considered to be most reliable index, that reflects a comprehensive interaction of various factors (medical-biological, social-economic, demographical and etc.) with its direct and indirect influence on population health status.

Mortality indices are particularly more exact and reliable in comparison with morbidity data. Population health securing and promotion could be aimed on decrease of mortality rate, e.g. mortality index can serve as goal-oriented indicator for health care system.

Numerous investigations demonstrate that health care system currently have quite limited resources for the further decrease of mortality rate and accordingly on increase of life expectancy.

Goal-oriented indicators – are the indicators of goal achievement (final results of activity).

The main demand in the choice of mortality indices by separate causes is: the possibility of health care system to influence on their rate. The other condition being taken into consideration is their input into general mortality structure.

In Kazakhstan significant disproportion in life expectancy of men and women is observed. From the other side, weight of elderly people in Kazakhstan was made up 7% in 2005, that according to UN classification puts the republic together with the number of countries with aging population. Decrease of mortality rate in young and middle age population will lead to increase of life expectancy and carry out positive influence on the situation with aging of the population. The leading causes of mortality for the population of Kazakhstan are diseases of cerebrovascular system, injuries, oncological diseases, that makes up more than $\frac{3}{4}$ of all mortality causes.

Diseases of blood circulatory system are on the first rank place among the mortality causes (51,7%), at that mortality from them is increasing every year.

Equally important are injuries with lethal outcome, with transfer to disability, temporary loss of working ability, that brings a dramatic social and economical damage to the society. If in economically developed countries injuries are on the third place for today, than in Kazakhstan – it occupies the second place (14%) among the mortality causes of the population.

Having relatively low rates of malignant neoplasms morbidity quite high mortality rate of them is observed. In the structure of population mortality of Kazakhstan neoplasms are on the third place (11,5%), and mortality rate from malignant neoplasms have no active dynamics of decrease.

Infant mortality is considered as an indicator and operative criterion for assessment of the social well-being of the population, of the level and quality of medical-social care, effectiveness of obstetric-gynecological and pediatrics services activities.

Maternal mortality rate is a complex health index of women of reproductive age and it reflects the population output as a result of interaction of various economical, ecological, cultural, socio-hygienic and medical-organizational factors.

Maternal mortality is included into the group of preventable deaths and is one of the main criterion for appraisal of the quality of work of maternity homes, effectiveness of introducing scientific achievements into the health care practice.

At the beginning of 90-s of the XX century tuberculosis morbidity and mortality begin to rise in many countries of the world. In Kazakhstan the stable tendency of tuberculosis decrease, that was achieved in 80-s, also from the beginning of 90-s has changed for increase of tuberculosis mortality, and since 1995– for increase of registered morbidity rate. The peak of mortality was registered in 1998. Tuberculosis mortality significantly decreased during the last years. This is an urgent problem, taking into account that effectiveness of the activities against tuberculosis will be very important for inclusion of Kazakhstan into the WTO and into the number of 50 developed and competitive countries of the world.

Significant influence on mortality rate from separate causes has alcohol abuse and drug addiction. So, a high correlation between alcohol intake and mortality from accidents, injuries and poisonings is proved.

Real threat for population health of Kazakhstan is presented by the epidemiological situation on HIV-infection, with continuous morbidity increase, including diseases caused by HIV.

Thus all selected indicators satisfy to the main selection criterion. Some of them are corresponding to the demand related to importance of the input into the general mortality structure, others have high social meaning.

CORRELATION BETWEEN BELIEFS AND LIFE STYLE OF PEOPLE IN THE REPUBLIC OF KAZAKHSTAN

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Kazakhstan scientists fairly say that the period of social and economic shifts in the Republic of Kazakhstan considerably changed mentality of people, their values, spiritual and ideological outlook [4]. This article provides the results of correlations between people's world view and their lifestyle.

Materials and methods. In order to conduct probabilistic assessment of health behavior in our study there were carried out correlation analysis of psychosocial and medical factors, and also regression analysis to determine the level of influence of these dependant factors. Factor analysis was conducted in relation to health self-assessment, world view and lifestyles, mutual influence of stress and depression on the health status of respondents. The statistical sample consisted of 572 respondents from 5 regions of Kazakhstan.

Results. The following interpretations were based on the correlation coefficients that we gained. People who think that their life success first of all depends on financial welfare depend on luck ($r=0.23$); do not have or deny strong will ($r=-0.1$) and do not attach importance to their health ($r=-0.12$). Those people who think abilities and talents are of greater importance also depend on luck, but this time correlation is weaker ($r=0.21$) and there is a negative relationship with health, i.e. these people find health as key for life success ($r=-0.24$). Of great interest is direct relation with "health" ($r=0.13$). Those who underlined "health" as a source of life success will try to regulate their sleep and go for everyday walks ($r=0.1$).

Conclusion. Thus correlations, which we found, make it possible to draw the following conclusion provided that you know what an individual considers to be the most important in achievement of life success, you can estimate his or her psychosocial state and design motivation technique to change health behavior.

COMPARATIVE STUDY OF THE ANXIETY RATE IN DIFFERENT POPULATION GROUPS IN THE REPUBLIC OF KAZAKHSTAN.

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For scientists studying of anxiety is of great importance because high level of anxiety is a destructive trait and can have injurious effect on a person's vital functions, cause cognitive impairment, diffidence, low self-esteem, and conflict relations and predetermine aggressive behavior [2-4]. People with high anxiety rate are in the risk group to have neuroses and psychosomatic disorders [5].

Materials and methods: In our study for the differentiated psychosocial assessment of population health status in Republic of Kazakhstan G.Teilor's personal inquirer was applied, which is used for assessment of anxiety levels (based on MMPI - Minnesota multiaspect personal inquirer). 572 respondents from 5 regions of Kazakhstan took part in testing.

Results: Findings of our study showed, that only 3.3% of respondents had low level of anxiety; 24.8% had middle-low level, 28.6% had middle-high level of anxiety 22.4% of the interviewed had high level of anxiety and 1.8% had very high level of anxiety.

Conclusion: Anxiety was more prevalent among women, office workers, city-dwellers, people with higher education and elderly people. Anxiety among the respondents was caused by such social conditions as unemployment, financial vulnerability and low self-esteem. Consequently the problem of adequate perception can be a prospective objective of public health and clinical psychology.

Key words: anxiety rate, neuroses and psychosomatic disorders, psychological testing, anxiety prevalence, public health, clinical psychology.

EPIDEMIOLOGICAL APPROACH TO STUDY DOMESTIC INJURIES AMONG INFANTS

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Introduction. Under 1 injury as a cause of death is not a leader but one of the main causes. A decade ago injury had no a significant role in the structure of infant mortality and morbidity. But improvement of health care and introduction of modern technologies, infant mortality declined, and structure of infant mortality was changed [1]. Ten years ago main causes of infant mortality were conditions of perinatal period, infections (acute respiratory infections and diarrhea), congenital malformations, and injuries. Present time injuries took leading positions in the structure of infant mortality [1]. 54% of infants who were killed by injuries died due to burns (thermal and chemical), mechanical asphyxia (26%), and falls (15%).

World experience showed that injuries among infants are the most preventable, therefore their environment is close and mostly are constrained by their dwellings; infants have limited contacts with damage factors of outdoor environment and many social factors which are risky for senior children and adults [3, 5, 6].

Many studies proved that effective interventions of primary prevention among young children decline infant mortality as well as infant morbidity due to accidents [5, 8]. Development of effective preventive interventions is not possible without epidemiological studies that help to identify influence of various factors to frequency and prevalence of diseases and injuries [2].

The purpose of the work is to formulate technical approaches for epidemiological studies applied to accidents and injuries; to demonstrate study of risk factors on the example of domestic injuries.

Epidemiological approach. The modern epidemiological method studying injuries is based on the concept that trauma (injury) is a consequence of dynamical interaction between environmental factors and host's factors [2, 7]. Environmental factors in our case were dwellings, awareness of parents about risks for babies, planning of room, furniture, accessibility of dangerous substances and etc. Host's factors were age, gender, level of physical development, type of central nervous system (excitability, psychical development). In the certain circumstances existing dynamical equilibrium between environmental and host's factors could be disrupted and resulted in traumatic event. Summarizing results of studies, devoted to

identification of environmental, social and economical factors related to injuries confirmed validity of epidemiological approach.

Epidemiology is divided into descriptive, analytical, and experimental epidemiology [2, 7]. Descriptive epidemiology includes the identification of prevalence and structure of injuries in a population. Derived data in combination with data of own study help in development of hypothesis about possible causes and risk factors of injuries. Conducting own study it is crucial to find answers to the questions of epidemiological triad: who, where and when? Analytical epidemiology is even more ambitious – it attempts to specify causes of injuries and find interaction between environmental factors and host's factors. Analytical epidemiology uses retrospective and prospective types of study. Detailed description of these studies is out of scope of this piece of work but here retrospective study was used. Experimental epidemiology implies intervention with further analysis of its effectiveness, e.g. effectiveness of intervention on reduction of morbidity due to injuries among young children.

In this work to formulate hypothesis about risk factors we used descriptive epidemiology. Data collection was conducted at the Child City clinical hospital #. We included to the primary data base all infants with injuries who were hospitalized during 2006.

Methodology and study. The work was done into a few stages. At the first stage we identified objects and unit of observation, data collection process, data analysis process, plan and program of study.

All infants who were hospitalized to the Child hospital due to injuries, poisons and other external causes became objects of the study. The Child City clinical hospital # 1 is the only medical organization providing urgent and routine medical specialized care to children under 15.

The unit of study was a case of hospitalization of injured at home baby under 1 year into different departments of the hospital (traumatological, neurosurgery, thoracic surgery, contaminated surgery, and toxicology) in 2006 (Table 1).

Table 1. Distribution of hospitalized children into departments of Child City Clinical Hospital # 1

# of the department	Department	Number of cases
2	Traumatological	102
3	Neurosurgery	95
4	Thoracic surgery	21

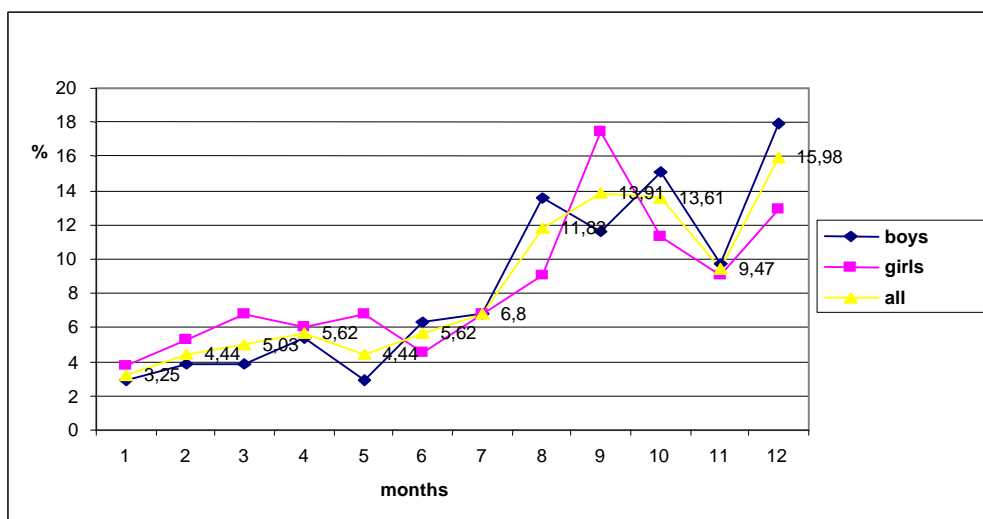
5	Contaminated surgery	21
10	Toxicology	99

To collect data there was developed a questionnaire for injured at home hospitalized child under 1 year. The questionnaire consisted of 3 parts and 21 questions. As a source of information we used hospital card (form 003-U).

Retrospective study was conducted. The total number of cases was 418 but at the next stage sample size became 338 (80.8%), because we excluded injures occurred out of home settings: road accidents, street accidents and etc. For statistical analysis we used MS Excel 7.0, and SPSS package 11.0.

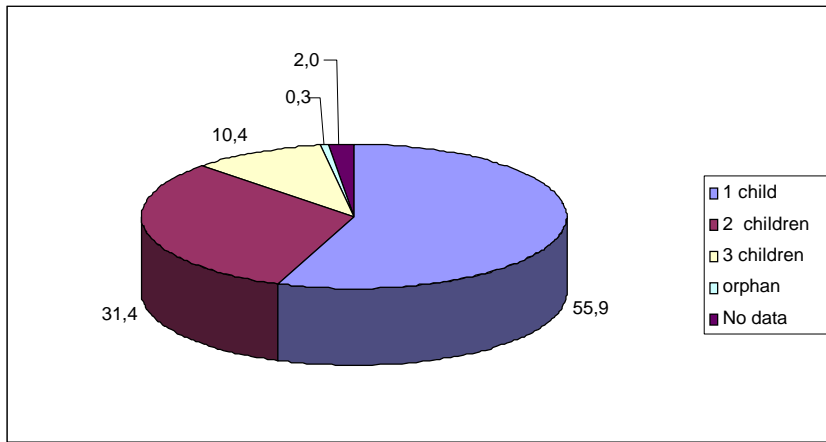
Results. 61% of injured children were boys, 39% - girls ($p < 0.05$). Figure 1 show that 16% of injured infants were 11 months old, but girls' peak was at the age of 8 months (17.4%) that could be explained by anatomical and physiological features of development of female infants: at that age they grow and develop faster than boys. Mean age of injured babies was $7.3 (\pm 0.2)$ months.

Figure 1. Distribution of injured infants by age and gender



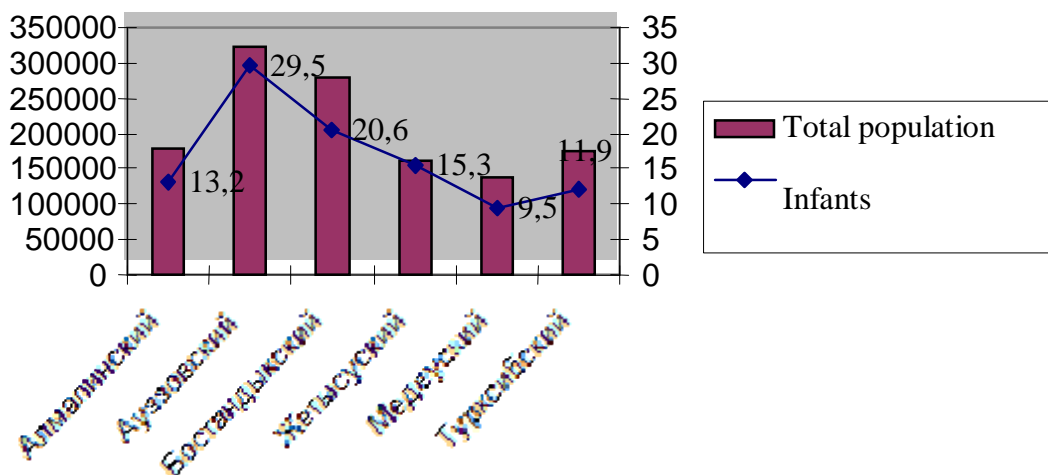
As shown at Figure 2, more than half of injured children were the only children in the families – 55.9%.

Picture 2. Number of children in families



The most number of injuries occurred in Auezov district (28.4%), with equal frequencies among boys and girls (28.2% and 28.8% relatively). However, comparing these results with official data of City Department on statistics about number of population in the districts of Almaty, we can not resume that Auezov district was unsafe for infants (Figure 3).

Figure 3. Ratio of total population in the districts of Almaty to the number of infants



The Table 2 reflects structure of domestic injuries among hospitalized infants. The first place was occupied by thermal burns (30.0%), second place – falls (29.3%), and third place - poisons (24.0%). Thermal burns among boys also had a leading position, but second place was occupied by poisons, and third – falls. Infant girls fell in 37.8%, had poisons in 23.4%, and thermal burns in 22.7%.

Table 2. Structure of domestic injuries among hospitalized infants.

Type of domestic injury	Both		Boys		Girls	
	cases	%	cases	%	cases	%
Thermal burns	101	30.0	71	34.5	30	22.7
Chemical burns	6	1.7	4	1.9	2	1.5
Falls	99	29.3	49	23.8	50	37.8
Mechanical asphyxia	26	7.5	14	6.8	12	9.2
Physical injuries	11	3.4	8	3.8	3	2.3
Wounds	3	0.8	2	0.9	1	0.8
Electrical injuries	2	0.5	0	0	2	1.5
Bites	8	2.6	7	3.5	1	0.8
Syndrome of child abuse	1	0.2	1	0.5	0	0
Poisons	81	24.0	50	24.3	31	23.4
Total	338	100	206	100	132	100

Table 4 gives information about circumstances of domestic injuries. All actions, child care manipulations or absence of child care that occurred just before traumatic event were divided into following groups:

Table 4. Circumstances of domestic injuries.

Circumstances of injury	Total		Boys		Girls	
	cases	%	cases	%	cases	%
During feeding/at the table	78	23.1	48	23.3	30	22.7
During bathing	2	0.6	1	0.5	1	0.8
During wrapping	2	0.6	1	0.5	1	0.8
Playing	24	7.1	12	5.8	12	9.1
In play-pen, go-cart, baby carriage	14	4.1	7	3.4	7	5.3
Single-handed	108	32.0	70	34.0	38	28.8
During sleeping	48	14.2	29	14.1	19	14.4
During treatment	36	10.6	22	10.7	14	10.6
Forced state	25	7.4	15	7.2	10	7.5
Violence	1	0.3	1	0.5	0	0
Total	338	100	206	100	132	100

Table 4 demonstrates that mostly injured infants were unsupervised (single-handed) – 32%, at the table or were feeding – 23.1%, or were sleeping – 14.2%.

Time of accidents had two peaks – from 2 p.m. to 3 p.m. and in the evening from 8 p.m. to 9 p.m. We can conclude that these peaks coincided with time of day sleeping and time before night rest when both parent and infants were tired.

Conclusion. The majority of hospitalized infants with injuries had accidents at home – 81%. Boys suffered more frequently (61%) than girls (31%). The most “dangerous” age for boys was 11 months, and for girls – 8 months. It is explained that girls grow and develop faster than boys, and at the age of 8 months they have higher mobility but less coordination of movements.

Families with number of children over than one had less injured children but this statement should be critically revised during further studies, however one of the explanation is that parents with one child have less experience. Despite on fact that the most part of injured infants lived in Auezov district we can not resume that the district became a risk factor. Also we can not presume degree of influence of living conditions to the probability of home accident.

In the structure of hospitalization on injured infants thermal burns, falls, and poisons were leaders. At the time of traumatic event young children were unsupervised, were at the table or slept. According to the data of the study time of injury usually coincided with day sleeping and evening time before night rest.

Predisposing factors or risk factors of injury were gender, age, experience and awareness of parents, time, and circumstances. Damaging factors for infants were hot liquids or surfaces, contact with floor and other solid surfaces, poisons, including medicines. Thus on the base of descriptive epidemiology we can formulate a few hypotheses for further analyses and probably studies:

- Even at the age under one we can observe gender differences between boys and girls.
- Experience and awareness of adults play a significant role in prevention of child injuries.
- Usually infants get injuries when are unsupervised, eating or at the table and during sleeping.

Development of effective measures for domestic injury prevention needs further studies of formulated hypotheses.

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SOCIOLOGICAL RESEARCH OF MEDICAL-SOCIAL CARE ACCESSIBILITY TO PERSONS OF RETIREMENT AGE

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Relevance: Provision of elderly people with medical-social care is one of the most important targets of the present time for all civilized societies in relation to fact of increasing of the weight of old people in the world population.

Aim: to study organizational aspects of provision of elderly people with medical-social care for scientific justification of the criteria, that form a priorities of basic needs, and factors determining their health status, for development of methodical approaches for optimization and accessibility of rendering care for them.

Methods: social-epidemiological, informational-analytical, sociological, statistical. Observation unit – retired person, registered in the department of social welfare. Study object – retirees' aggregate by age criteria. Study base – Almaty city. Period of observation: 2003-2006. Sample size: 700 people. Information was collected with the use of specially designed questionnaire.

Results: complex social-epidemiological research of lifestyles and living conditions was conducted among the elderly people. By results of the research majority of the study population in all 4 groups was made up by women (72,5%), that is true for all age periods, with incasing of this gap in older ages; weight of disabled persons was 10%; majority of urban retirees were married couples living alone. The level of social-economical functioning of the retired persons in society is determined by the size of the retiring pensions, and because of its very low size the material standing of retirees in society was worsened. Dissatisfaction with the size of retiring pension is determined by it's low buying power and doesn't correspond to growth of prices under the inflation and economical instability. Out of the retirees of all groups, who defined their position in society to be dissatisfactory, the negative influence of the latter on psycho emotional status was mentioned by 48,0% of respondents, living on the territory of the polyclinic № 12; 44,0% - who were registered in ATC; 10,0% - in the House of veterans. In their majority (52,2%) retired people assessed their own health status as dissatisfactory, explaining it by the following reasons: absence of financial means for prevention, diagnostics and treatment (18,6%); having chronic disease (11%); inaccessibility of specialized medical care (hospital, private clinic) (6,8%); doesn't care their own health (3%). It was detected that the most needed form of medical-social service mentioned by all 4 groups of respondents (from 70,5 to 85,3%) was polyclinic form. Respondents in all 4 groups marked the district therapeutically service as the most accessible form of medical-social care (50,7 - 90,0%). Broadening of accessibility of medical-social care to the retirees of all 4 groups is being considered in the development of legislative base on giving allowances for diagnostics, treatment and purchasing of medications (41-44,5%).

Thus, insufficient retiring pensions provision under the condition of continuous pricing is worsening the economical dependence of retired persons from governmental dotations in to social field. The latter determines their dissatisfactory position in society, limiting the accessibility of medical-social care in its different forms, and also decreasing quality of

conducted treatment because of insufficient material resources for purchasing of necessary medications and conduction of the full amount of therapeutic-diagnostic procedures.

ABOUT THE ISSUE OF QUANTITATIVE AND STRUCTURAL EVALUATION OF THE USE OF ROENTGEN METHODS OF DIAGNOSTICS

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Kyzylorda regional consultative-diagnostic center facilitates the provision of high specialized medical care for both urban and rural population.

Results of analysis and evaluation of the dynamics of change of the number of x-ray examinations, made in Kyzylorda RCDC in 2005-2007 showed that in 2005 there were 14710 visits related to x-ray examinations, and in 2007 – 17200. At that in the structure of x-ray examinations the biggest weight was made up by the respiratory system examinations (34,4% and 48,5% accordingly), on the second rank place were the examinations of osteoarticular system (31,7% and 27,7% accordingly), on the third – other organs (26,7% and 17,2% accordingly), on the forth – digestive system organs (5,6% and 5,2% accordingly) and on the fifth – organs of urine-genital system (1,6% and 1,4% accordingly). As for the correlation between the studied parameter in 2007 and in 2005 the increase of the total number of examinations by 16,9% was detected, and also their incensement by all kinds of examinations.

Study results on change of the number of special kinds of x-ray examinations in Kyzylorda RCDC in 2005-2007 showed that in 2005 there were conducted 294 of them, and in 2007 their number has increased by 5,4% and made up 310 examinations. At the same time the biggest weight was made up by special x-ray examinations of the organs of urino-genital system (81,6% and 78,7% accordingly), on the second rank place there were the examinations of digestive system organs (15,3% and 6,1% accordingly), on the third – of respiratory system organs (2,7% and 9,4% accordingly) and on the fourth – osteoarticular system (0,3% and 0,3% accordingly). At that in 2007 to compare with the previous year the number of special X-ray examinations of the respiratory system has increased in 3,5 times, and digestive organs, contrary, has decreased almost in 2 times.

Study of the dynamics of change of the number of ultrasound examinations in Kyzylorda RCDC revealed that in 2005-2007 there were formed certain directions in the structure of studied examinations.

At the same time in 2007 in comparison with 2005 the studied parameter increased in examinations of thyroid gland, organs of urino-genital system, brain and other organs, and its decrease osteoarticular system.

Study of the change in the number of computerized tomography in Kyzylorda RCDC showed that (table) in 2005-2007 their number increased from 4437 to 5055 or by 13,9%, and in the structure of studied examinations the first place was occupied by brain examinations (40,5% and 43,1% accordingly), second – examinations of osteoarticular system – (26,3% and 24,1% accordingly), third – digestive system organs (18,6% and 18,2% accordingly), fourth – organs of thorax (12,6% and 12,1% accordingly), fifth – pelvis organs (1,6% and 1,7% accordingly) and sixth – other organs (1,5% and 0,8% accordingly).

Thus, it was detected that during the studied years volume and structure of the roentgen methods of diagnostics being under use in Kyzylorda RCDC gradually becoming differentiated. This proves the positive changes that take place at the regional medical organizations and Primary Health Care organizations related to their provision with the appropriate diagnostic equipment.

ORGANIZATION OF HOSPITAL REPLACING TECHNOLOGIES AND EVALUATION OF ITS EFFECTIVENESS

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Currently speed of development of medical-informational technologies and achievements of the modern scientific research developments in medicine determine new approaches to reforming and improvement of the system of rendering medical services under the market environment of health care development. One of the ways of improvement of the effectiveness of activity of therapeutic-prevention facilities is to decrease the amount of in-patient care as a result of redistribution of the extents of render medical care from expensive in-patient to out-patient care with the use of hospital replacing forms and inculcation of low-cost but effective technologies.

The aim of the research: To study and give the assessment of the effectiveness in rendering of hospital replacing medical care in health organizations and to prepare suggestions on its improvement.

Study objectives:

1. To study the structure and amount of hospital replacing medical care.

2. To determine and prepare a number of suggestions on improvement of organization and rendering of hospital replacing care to the population, to assess its effectiveness in comparison with extravagant day-and-night-clinic.

Study object: day hospital of the Polyclinic № 8, Almaty.

For analysis of the activities of the day hospitals and their medical, social and economical effectiveness we conducted a questionnaire survey as this method is regarded to be most reliable data source.

Totally 102 respondents were covered by survey, 42,1% out of them were men and 57,9%- women.

Analysis of the respondents showed that 3,9% of them were in age interval 15-24 years, 29,1% -25-29 years, 27,1%-35-44 years , 20,8%-45-54 years, 12,9% -55-64 years, 6,2%-65-74 years.

Distribution of the respondents by social stratification was following: students – 2,5%, clerks -25,4%, workers -26,5%, housewives – 16,4%, retired -13,1%, businessmen – 5,6%, self-employed-5,8%, invalids – 4,7%.

By respondent's opinion treatment in day hospital have the following advantages: suitable time-table - 42,2%, this mean the possibility to take a course of treatment without breaking from the main job, 10,1% - availability of more free time for housekeeping, 23,1% - doesn't separate from social life.

The answers about satisfaction with day hospital activities were following: 60,4% - fully satisfied, 1,7% - unsatisfied, 26,6%- not always satisfied, 11,3% - couldn't answer.

Medical effect was determined by achievement of supposed result in day hospital (recovery, improvement, etc.) The gained data proves high effectiveness of the broad use of hospital replacing technologies.

HEPATITIS B PREVALENCE AND PREVENTION MEASURES IN THE REPUBLIC OF KAZAKHSTAN

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Parenteral viral hepatitis, with hepatitis B dominating among others, is one of the most serious and actual problems of the health care of Kazakhstan.

A strong resistance of the virus of HB to various physical-chemical factors is revealed currently.

At a whole one third of the population of the earth has met with this infection. About 350 millions of people – are asymptomatic carrier of HB virus [1].

The majority of lethal outcomes in patients with acute viral hepatitis is connected with this very type of hepatitis, and also most of cases of development of chronic hepatitis, cirrhosis and primary hepar cancer (at that often takes place combination of the HB with delta viral infection) [2].

Quite a lot of information is gathered nowadays that allows to consider hepatitis B strict anthroponosis [2]. Number of studies demonstrated that the main sources of HB-viral infection are not patients with acute hepatitis B (only in 4-6% of cases), but a large group of people with chronic forms of this disease and those who considered to be “carriers” of HB-virus (HBs-antibody). [3,4,5,6,7].

In Kazakhstan vaccination of newborns and infants of the 1 year of life against HB is provided by the special order of the Ministry of health RK, Decree of he Government and is included into National calendar of immunizations. Active immunization of the viral HB in children in the Republic of Kazakhstan was started from 1998. We conducted a retrospective analysis of the frequency of HB prevalence in the republic during the last 10 years. So, sharp decrease of HB morbidity was detected. In the period before the vaccination (1997) HB morbidity rate in children was up to 26,2. In 2007 this index has declined to the level of 0.49 for 100 000 child population. Besides this, the frequency of forming chronic forms of disease was decreased.

Vaccination scope against viral hepatitis in republic is quite high and makes up 97% and higher.

Significant decline of risk of introduction of HB infection of the patients in therapeutic-diagnostic organizations during their treatment or examination – is the result of huge efforts being done on prevention of contamination with this virus, realization of the complex of measures on break of HB-virus transmission (improvement in equipment of medical organizations with medical and laboratory disposable instruments, etc.) [4,7]. At a whole introduction of infection in therapeutic-diagnostic facilities makes up no more than 5-10%.

Alongside with this a number of patients who introduced the infection using contaminated needles for intravenous injection of drugs increased up to 55% in HB, that allows to consider hepatitis B to be an anthroponosis infection [8,9,10,11].

Special attention need to be paid to the dangerous tendency, that appeared in last years, of more active inclusion of 11-14 years old children into the epidemiological process. Mostly it connected with penetration of drugs into the child surroundings also and their use even by 7-8 years old children.

But nevertheless currently HB could be named as infection manageable by the special means of prevention.

Safe and effective vaccines against hepatitis B are created. Detection of the “Australian antibody” (HBs-Ag) and detection of the fact that persons who have antibodies against it are protected from hepatitis B, determined the way of developing of vaccine against this disease.

Presently among the known parenteral viral hepatitis only hepatitis B could be prevented by means of special prophylaxis. But it should be mentioned that application of vaccines against HB allows to prevent also the cases of simultaneous contamination with viruses of HB and HD, because pathological influence of the last one can take place only in the presence of HB virus replication. However these vaccines are not effective at all in case of super infection – during infection by delta-virus of persons who were infected before by HB-virus in presence of persisting HBs-antibodies in blood.

Hepatitis B is a priority problem of health care all over the world that related to high rate of population infection with virus, that leads to severe after-effects. The only one and effective measure of prevention of hepatitis B, cost-effective one is immunization of the population. Development of the immune prophylaxis on the current stage demands not only careful scientific reasoning of the epidemiological survey but also detailed economical cost-effectiveness analysis for determination of the optimal programs and vaccination tactics.

During the period of practical application of vaccines against hepatitis B and due to realization of broad programs of vaccinoprohylaxis in our republic big successful results were achieved in the struggle with this infection:

- sharp decline in morbidity rates of hepatitis B.
- significant decline in the frequency of lethal outcomes and formation of chronic diseases, including primary cancer of hepar.
- results of mass vaccination against HB allowed to gain the confirmation of the possibility to treat hepatitis B as infection that could be controlled by the means of special prophylaxis.
- great economical gain is observed in case of conduction of vaccinations against HB in comparison with costs of treatment of acute and chronic forms of HB viral infection

A great success in the struggle against hepatitis B in Kazakhstan was achieved only due to transition by WHO recommendation (1998) from vaccination against HB only persons, composing groups of high risk of infection with HB-virus, to immunization against this infection of all newborns and infants of the first year of life.

DYNAMICS OF RESOURCE FINANCIAL PROVISION PROCESSES IN HEALTH CARE OF ALMATY CITY

N.A. Abildinova

In this article there were considered trends and structure of financing of guaranteed benefits package in Almaty in last 5 years (table 1).

Table 1. The size of financing of GBP in Almaty during the period of 2003-7.

The sources of financing	2003	2004	2005	2006	2007, plan
Local budget	6 640,1	7 932,6	10 513,2	11 894,4	16 311,1
Targeted transfers from republican budget	100,0	500,0	1 828,3	1 956,8	2 538,0
Fee-paying medical and other services	836,4	971,6	1 055,8	1 033,3	1 105,6
Total	7 576,5	9 404,2	13 397,3	14 884,5	19 954,7
Dynamics in %		124,1	142	111	134,1

Taking into account the updated data the budget of health care of Almaty city for 2006 made up **13 851 161,0 t.t.**, out of which **local budget** – 11 894 355 t.t. (86%), **republican** – 1 956 805 t.t. (14%). The sum of funds disbursement from two sources was 13 823 350,2 t.t. or 99,8% of annual plan (performance of local budget - 100%, republican budget – 98,9 %). The amount of unapplied funds was **27 810,8 t.t.**, of which by local budget – **5 805,9 t.t.**, by republican budget – **22 004,1 t.t.**

On the whole in 2006 the amount of costs for population health protection out of all sources made up 14,884,5 mln.t., with growth by 11% compared to the level of 2005, including the growth of local budget funds by 13%. Actual costs for health care per one citizen in 2004 made up 7 331 tenge, in 2005 - 10 455 tenge, in 2006 – 12 573 tenge (the 6-th rank place among the regions of Kazakhstan). But taking into consideration abstraction of the certain amount of funds for urgent care for rural population of the bordering areas of Almaty region, for migratory population, the volume of financial costs per 1 citizen was decreased in average by 8-10%.

The research materials demonstrate the effectiveness of utilization of state budgets' funds for health care of the city. Efficient use of the funds of the local budget was provided through the system of state order for guaranteed benefits package, purchasing medical equipment, nutrition, medicines, major repairs of medical establishments. At that there was increased per capita financing standards of PHC from 136,4 to 196,5 tenge, at mid-republican level of 133 tenge.

The significant amount of financial means was devoted for strengthening of material-technical basis of medical organisations – thorough repairs, reconstruction and strengthening of aseismic stability of buildings. So, 1 092 mln.t. was spent for these purposes in 2006.

By PHC services the volume of costs has increased everywhere, except the costs for in-patient services (from 3 872,3 to 3 736,4 mln.t. or from 32,7 to 27%). The structure of costs in the last year is characterized by growth of the weight of funds aimed for mother and child health protection (from 2 568,2 to 3 625 mln.t. or from 21,7 to 26,2%), and activities of the specialized dispensaries (from 1 327,5 to 3 212,1 mln.t. or from 19,2 to 23%). Costs for PHC increased from 2 837,5 to 3 128,5 mln.t., but at a whole they remained stable by their structure (24%).

Acquisition of goods, works and services was realized in accordance with the Law of RK “On state custom”. There were conducted 153 tenders by the Health Department in 2006, 101 of which took place for the sum of 4 952 957 t.t., 11 – for the sum of 935 873,6 t.t. – from one source, 49 – for sum of 114 983,1 t.t – on price proposals for state purchase of goods, works and services for medical organizations.

Thus, the given data are characterizing the processes of planning, allocation and distribution of funds by their amount and structure, and allow to take adequate management decisions on health care in Almaty city.

ANALYSIS OF HEALTH PERSONNEL PROVISION AND VARIOUS HEALTH SPECIALTIES POTENCIAL IN DYNAMICS BY ALMATY CITY.

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One of the most significant health care problems is the issue of people ware. This problem is important for Almaty city as well. And it is being solved relatively successfully.

Since 2005 the defined level of staffing and their supply with specialists was provided. Staffing by medical doctors made up 92,2% (in 2005 - 92,7%, in 2006 - 92,6%), by mid-level health personnel – 93% (94,4%, 94,9%).

In 2007 flow-out of health personnel increased. Flow-out of physicians made up 1005 people (in 2005 – 661, in 2006 – 671), mid-level health personnel – 1899 (in 2006 – 1282). Increasing fluctuation of young specialists was continued.

The number of physician's vacancies by the end of year made up 428 (2005 – 432, 2006 – 358), mid-level health personnel vacancies – 570 (2005 – 434, 2006 – 454). The problem of understaffing by primary health care specialists is still urgent.

The age structure of health personnel is quite stable, but the afflux to the system of the specialists under the age of 25 and of 26-30 years old is being outlined. 16 PhDs and 113 candidates of sciences are employed in health care. The weight of physicians of a pensionable age is increasing – from 8,9 to 10,4%, the weight mid-level health personnel of pensionable age was decreased from 6,5 to 5,3%.

The activity of top-managers of medical organizations in getting the qualification categories in public health was increased to the maximum in 2006-2007.

The potential of health personnel was improving by regular postgraduate trainings, continuous education at the working places, trainings abroad. In 2005-2007 significantly increased the weight of physicians getting postgraduate training – from 28,5 to 30% annually. The coverage by postgraduate training of mid-level health personnel was increased from 20,9 to 29,6%.

Planned retraining of personnel in health management and financing was realized. 158 specialists were trained, including 42 – in 2005, 85 – in 2006, 31 – in 2007. Allocated republican transfers were fully applied.

231 GPs were trained and retrained, of which 162 – in 2005, 19 – in 2006, 50 – in 2007. Targeted transfers from the republican budget for these purposes were disbursed in 2005 by 98,4%, in 2006 – by 100% and in 2007 - by 100%.

As a result of a consistent policy on training of health personnel the weight of physicians without retraining over the 5 years decreased from 11,5% in 2006 to 8,6% in 2007.

Due to the funds of republican transfers there were increased costs for training, size of scholarships and compensation for fares, and increased the number of students. Admissions to Almaty medical college are increasing each year. Planned target transfers from the republican budget for these purposes in the size of 27,6 mln.t. were disbursed for 100%.

EVALUATION OF THE RESULTS OF HEPATITIS B VACCINATION IN CHILDREN WITH CHRONIC AND TERMINAL RENAL FAILURE

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Hepatitis B vaccination is recommended to all patients with renal failure. However, vaccination response in patients on hemodialysis is very low. This investigation is aimed to determine the response rate for hepatitis B vaccination among the patients with chronic (ChRF) and terminal renal failure (TRF), and also factors influencing them.

Goal of research: comparative assessment of the results of hepatitis B vaccination in children with chronic and terminal renal failure.

Research materials and methods: we assessed the level of anti-HBs after the initial vaccination of 65 children (30 pre-dialysis and 35 on dialysis), who were under the treatment in the nephrological and hemodialysis departments in Almaty and Astana cities. The inclusion criteria are children with chronic renal failure (chronic renal disease of 3-4 stage) – predialysis group and children on hemodialysis (dialysis group), vaccinated against hepatitis B with double dose (40 mkg) of Angerics B vaccine by scheme 0-1-2-6-months intramuscularly in deltoid.

Before the vaccination all children were examined for HbsAG, anti-HCV and anti-HBs by IFA and PChR methods. Antibodies to superficial antigen of hepatitis B (anti-HBs) were studied in 1 and 6 months after the completion of the initial series of vaccinations with evaluation of vaccination response (ELISA –test). Antibodies titre (anti-HBs)>10 mMU/ml was considered as protective, <10 mMU/ml – as absence of postvaccinational response, seroconversion (weak response) at the level 10–100 mMU/l, seroprotection (significant response) – 100–1000 and >1000 mMU/ml. HBsAg positive patients were excluded. Statistical analysis included t-test and χ^2 -test for comparison among groups.

Research results: group of on-dialysis children differed with statistical confidence from the predialysis group by age (12,8±3,47 and 10,2±4,19 years, accordingly, p<0,001), by creatinine

level (862 ± 249 and $207\pm 72,9$ mkmol/l accordingly, $p<0,001$) and rate of glomerular filtration ($7,13\pm 2,20$ and $54,2\pm 19,8$ ml/min accordingly, $p<0,001$). Among the reasons of renal failure dominated congenital anomaly of urinary system (60 and 46,6%).

During the analysis it was detected that seroconversion (anti-HBs >10 mMU/ml) was detected in 50(76,9%) children, but sufficient seroprotection (significant response, titre >100 mMU/ml) was revealed only in 35 (53,8%). Out of 35 on dialysis patients 30(85,7%) responded for vaccination and 15(42,8%) of them demonstrated excellent response (seroprotection). Among predialysis patients 22(73,3%) responded for vaccination and in 20(66,6%) of them seroprotection was detected. Seroconversion was revealed in 8(22,8%) children on hemodialysis, while in predialysis group only in 2(6,7%). Titre of anti-HBs <10 mMU/ml with equal frequency was determined in groups under the consideration (7/20 и 6/20 respectively). Among those who didn't give the response for vaccination the majority were children on hemodialysis (14,3%). Despite the fact that responded patients were taller than predialysis patients, they didn't significantly differ from each other (χ^2 -test; $p=0,183$). Significant seroprotective level of antibodies was much more higher in predialysis patients than in on-dialysis (χ^2 -test; $p<0,05$) (66,6 and 42,8% accordingly). Predialysis patients, who have negative response or seroconversion, were given immunosuppressive therapy (during the period of 1 year before the beginning of vaccination or vaccination period). Besides that, weak titre of antibodies (seroconversion) had 2 patients with positive anti-HCV in predialysis group. Age, gender and initial level of creatinine do not influence the response.

Conclusion: our results demonstrate that those who didn't give the response for hepatitis B vaccination were mainly children with terminal renal failure because of secondary immunodeficiency against a background of uremia, and also concomitant disorders of nutrition status and anemia. The reason of insufficient response in predialysis patients is application of immunosuppressive medicines for treatment of the main disease.

Among the responded for vaccination children with chronic and terminal renal failure (66,6% and 42,8 correspondingly) predialysis patients demonstrate excellent response in compare with on-dialysis patients. As a result there emerging the need in early vaccination of children with chronic renal failure before the start of hemodialysis therapy.

Key words: vaccination against hepatitis B, chronic renal failure, terminal renal failure

NEW TECHNICAL APPROACHES TO RAISING EFFICIENCY OF URGENT HEALTH CARE FOR PATIENTS WITH INJURIES

M.K. Kulzhanov, A.Gabdullin, Zh. Isayeva, E. Sabitova, Y. Suleimenov , N. Arslanova

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To meet the challenges of traffic, labour and home traumatism of the last years, which goes with severe combined injuries, planning the number of resuscitation surgical (anesthetic-resuscitation) brigades should be based on the number of profile calls and local settings.

The study we conducted let us distinguish two directions of work in operative management of hospitalization of patients with injuries. They are finding operative decisions in urgent hospitalization of patients with traumas and finding operative decisions in forecasting flow of patients who need urgent hospital care, reserve of beds, etc.

The current system of planning and reserving beds in municipal hospitals is based on orders of the Almaty health department. These orders fix profiles of hospital departments, number of beds for hospitals and emergency care units, and prescribe procedure of urgent and planned hospitalization of patients with injuries.

The main drawback in the system is that there is no centralized management of all hospitalization practice. The current centralized management by an emergency care unit ignores modern telecommunication technologies. Moreover this management is unilateral: from emergency care unit to hospital with no feedback, which results in considerable misbalance in flows of urgent and planned hospitalization.

Thus, in order to create efficient management system in hospitalization of patients with injuries, it is necessary to use science-based methods and modern means of processing information. Achieving this goal requires introduction of automated management system.

The automated management system, which was designed in the emergency care unit in Astana can be supplemented with the following information structure functional blocks: system of automated gathering and processing information on the number of beds and providing emergency care dispatchers with this information; algorithms and sets of programs for statistical data analysis on flows of hospitalized patients and forecasting the number of patients for certain periods of time; algorithms and programs, which would allow heads of hospitals to effectively plan the work.

The system needs algorithms and programs to create statistical accounts to be used by heads of health organizations to make strategic decisions and manage municipal hospital beds, number and types of health services including emergency care.

Environmental factors such as weather and traffic which determine flow of urgent and planned patients are different, therefore flows of urgent patients and planned patients are independent. Consequently everyday beds balance can be done only if there are tools to forecast the flow of urgent patients.

The current automated management system in emergency care unit in Astana provides a new approach to improvement of work of operative department.

It is known that one of the main component of quality of emergency care at the pre-hospital stage is time of arrival of emergency team at scene.

Centralized call acceptance and management of all emergency teams in a city can ensure efficient use of resources due to possibility to maneuver with free reserves. However the system is effective in limited territory. With further coverage of territory, some detached areas of the city become so big that centralized system loses its advantages in comparison with autonomous management system of the area.

In this regard it is justified to consider the expediency of autonomous management of each separate area by an independent unit of city emergency care, provided that the calls are accepted in a local centre of each area.

Besides, system flexibility can be raised provided that the principal city emergency centre has emergency teams in reserve to use them in certain cases in order to strengthen this or that area or to provide emergency care in case of mass catastrophe.

The whole procedure of providing emergency care can be divided into three phases. The first phase is purely organizational. It begins when call "03" is accepted and finishes when ambulance car with an emergency team leaves its parking place. Duration of this phase is determined by organizational omissions in the system, including time loss for registering a call, directing the call to the doctor of a team on duty, gathering team and so on. Therefore duration of the first phase is the most objective indicator of efficiency of emergency care system.

The second phase begins when an emergency team leaves for a scene and finishes when the team arrives at the scene. Duration of this phase is determined by both volume of resources (the number of teams and emergency care units) and where they are located in different times of day.

Finally the third phase begins when the emergency team arrives to the scene and finishes when it begins to help the victim. Duration of this phase does not depend on efficiency and organization of the emergency service, but is determined mostly by the city infrastructure.

Reduction of time loss at the third phase can be based only on certain measures taken by the municipal authorities. Reduction of time loss at the second stage can be based on rational use of resources and allocation of new resources. Reduction of time loss at the first phase can be achieved by optimization of emergency calls administration.

The main drawback in current call administration system is that it consists of many stages, each of these stages takes too much time. Therefore it is necessary to reduce the number of these stages.

Turning back to advantages and disadvantages of centralized management system, we should say that heads of an emergency unit are not responsible for administration of certain calls, do not actively participate in work of central calls management system and are passive to controlling and raising efficiency of work done by emergency teams.

In respect to calls acceptance decentralized zone system has only limited advantages in comparison with the centralized one. Since in big cities ambulance cars on duty must be dispersed around every area, the scheme of call accepting and directing is about the same as in a centralized system. The advantage is that the distance becomes shorter and less time is needed to find the required address.

If we change organizational structure of emergency care management system in the settings of a big city, it will not considerably reduce the number of stages in calls administration procedure. The reduction of the stages can be based only on automated system of management of health and technological processes in the service.

ORGANIZATION OF EMERGENCY CARE FOR PATIENTS WITH INJURIES

M.K. Kulzhanov, A.Gabdullin, E. Sabitova, Zh. Isayeva, Y. Suleimenov , N. Arslanova

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Improvement and timeliness of emergency care for patients with injuries is based on strong and quick communication between a dispatcher and each substation, provided that instructions are received by an emergency team on duty. After finding out the required address the team should depart for the scene immediately, receiving the rest of information by radio on the way. The system that provides automated search of an available team is the most efficient.

The basic principle of an emergency care station's work is delivering care in shortest possible time. Thus it is necessary to distinguish basic stages of this process, beginning with the moment of an accident and finishing with delivering the patient to the hospital.

The main stages and time each of them takes were distinguished on the basis of three-year observation (table). We should note that after the second stage there might not be an emergency call. In some cases patient's relatives may turn to traumatologic hospital or a district doctor.

The studies showed that most accidents are followed by emergency call "03" (stage 3), which takes on average 2 minutes. After the call has been accepted, an emergency team arrives at the scene in 15 minutes on average.

Before the emergency team arrives, the patient may get first aid from relatives or other people. Delivering emergency care takes on average 15 minutes. If necessary the patient can be taken to the hospital, which takes 15 minutes. Registration at the hospital can take about 5 minutes and after that administration of this call is completed.

Table – Key stages of delivering emergency care to patients with injuries.

Stages of delivering emergency care	Average time in minutes, needed to solve certain problem
1. Accident	-
2. Finding a victim	2±0.1
3. Call for an emergency team via "03"	2±0.23
4. Arrival of the team at the scene	15±0.71
A) call acceptance	2±0.12
B) directing the call to a substation and a team	2±0.18
B) boarding on ambulance car	2±0.27
Γ) journey to the scene	7±0.62
Δ) searching the scene	2±0.17
5. emergency care at the scene	15±0.29
6. Transportation of a patient to a hospital	15±0.83
7. Registration and acceptance of a patient in a hospital	5±0.79
8. Total average time loss	59±0.83

Thus 15 minutes pasts from the moment, when the accident takes place till arrival of the emergency team, transportation of the patient to the hospital takes the same time.

In some cases an emergency team cannot provide intensive care, than a specialized team comes. In this case delivering of the emergency care can take longer, 30 minutes.

When considering key stages of emergency care, it is necessary to remember that patient may die at any stage of this process.

The study we conducted showed that all patients with injuries can be divided into three groups: those, who die during the accident; those, who need emergency care, and are in danger of death or sever complications; those, who can wait for planned health care. The main goal of emergency service is t provide care at the pre-hospital stage and reduce the number of deaths. And time factor plays the key role in most cases.

The mission of the emergency teams is to deliver necessary amount of care and decide whether to hospitalize a patient or not. Therefore training of health workers in emergency teams should focus on diagnostic and treatment tactics at the pre-hospital stage and develop the ability to efficiently work at the scene. In some cases emergency teams take too long to carry out examination and treatment at the scene, instead of transportation of a patient to the hospital. Approximate time to deliver first aid is 10 minutes.

Theoretical estimation shows these measures will allow to reduce time from the accident taking place till hospitalization up to 25 minutes.

Some measures can be realized easily and do not require neither material nor technical expenses; other recommendations require scientific research, expenses, involvement of certain organizations in implementing these recommendation, exploration of new automation tools.

Emergency care system includes the whole complex of consequent measures:

- the first stage is delivering health care at the scene;
- the second stage is delivering health care on the way to the hospital;
- the third stage is delivering health care at the hospital.

Thus the research showed that by means of improvement of emergency care system and certain organizational activities in the whole city, one can reduce time needed for delivering emergency care to 6-7 minutes.

SOME MEDICAL TECHNOLOGICAL ASPECTS OF EMERGENCY CARE ORGANIZATION IN CASE OF INJURIES

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The key problem of emergency care is to provide optimal combination of shortest procedure of health care delivering at the pre-hospital stage, adequate amount of this health care and transportation of a patient to the hospital: the nearest hospital or specialized antishock centre. In our opinion, choice between minimization of time and amount of emergency health care must be determined by state of a patient.

It is necessary to prevent the victim to be taken away by passing cars. Right after the arrival to the accident scene members of the team should specify what the number of victims is and define who of them can walk, and who needs stretchers. The medical examination is carried out to find out if the victim needs health care or not. It is very often when disturbing factor remains after the ambulance arrival, in this case the team should free the victims from the disturbing factor with minimum traumatic effect.

The emergency team should do some necessary activities: carefully draw out the victim from the accident scene (for example from a ditch), take the victim to the safe place, extinguish a fire, dress the wound, immobilize fractures; stop the bleeding, clean airway of blood, vomit mass, etc.; make artificial respiration; take measures to fastest possible transportation of a victim to the hospital in case of hemorrhage or shock.

Emergency team must not leave the scene until there are victims left there. Than the team should distinguish those victims who need urgent care, i.e. those with impaired essential functions (first of all respiratory, circulatory cerebral impairment). If there are too many victims and not enough emergency teams, health care should be limited to elimination of the disturbing factor and correction of essential functions.

Members of the team make immobilization, intubation of trachea, venous puncture and catheterization. This short-term measures cannot be taken on the way to the hospital and take 10-15 minutes. Moreover emergency workers must record all information about the victims.

If the patient needs hospitalization, the team should contact with the dispatcher to find out to what hospital the patient must be delivered. Health worker should define whether the victim is transportable or not. Timely transportation of victims to the hospital is an important link in the chain of traumatologic care.

On the way to the hospital the amount of health care is determined by the state of a victim and aimed at maintenance of cardiac and respiratory functions and antishock measures. If

necessary emergency care workers deliver the whole complex of health care including blood or blood substitute transfusion, artificial respiration, defibrillation, etc.

It is known that traumatism depends on such socio-economic factors as industrialization, traffic infrastructure, power industries. Such indicators as treatment effectiveness

Traffic accidents for instance can produce multiple combined injuries resulting in terminal state and shock. Traffic accidents determine high lethality rate at the pre-hospital stage. However 30-50% of victims, who die can be saved with timely delivering of rather simple reanimation care.

Analysis of causes of sudden deaths shows that most deaths are preventable. Persons who cannot provide first aid are absolutely helpless when the accident happens and unable to provide elementary resuscitation aid. Therefore it is necessary to create the system of compulsory training among population to provide first aid. First of all professional groups such as life-savers, patrol force and police workers, fire brigades, workers and employees must be taught first aid methods.

In order to make the school work efficiently two courses were designed: the first one is aimed at special training of drivers; the second one is for training workers, employees, students and entrepreneurs.

Improvement of emergency care at the pre-hospital stage should be a priority objective in organization of acute care in a big city.

PRINCIPLES OF PROJECT MANAGEMENT IN HEALTH CARE FIELD.

A.D. Kulsharova, N.A. Abildinova

**Project POTENTIAL, Institute of scientific researches and personnel training of
John Snow Corporation**

Project management – is an integrate process. Actions (or their absence) in one direction usually influence other directions too. Such interaction forces to balance between the project objectives –often improvement in one area could be achieved only because of worsening in the other one. Such interpretation of the processes is accepted in the international community. As the goal of the given work is to present the basis of project management, which takes into consideration Russian (as analogue for Central-Asian republics) features and at the same time is corresponding with international standards, we

possibly keep the international terminology. Project is consisting of processes. Process – is the complex of actions which brings the result.

Processes oriented on product and concerning the specifications and product production, are determined by life cycle of the project and depend on application domain.

In projects, processes of project management and processes, oriented on product, are usually overlapping and interacting. For example, goals of the project could not be determined without clear understanding of product production.

Project management processes could be divided into six main groups, realizing different management functions: initiation processes; planning processes; execution processes; analysis processes; management processes; completion processes.

Project management processes overlapping each other and occurring with different intensity on all project stages.

Within each group processes of project management connected with each other through their entrance and exit.

Methods and tools – are mechanisms that transfer entrance into exit.

Goals of the project, its budget and resources could be changed. More over – project planning is not exact science.

Main planning processes are:

Planning of goals – development of the statement of objective (project justification, main stages and project goals),

Decomposition of goals – decomposition of project stages on more small and more controllable components for provision of more effective control,

Determination of project operation's composition – composition of the schedule of operations, that determine the realization of the different project stages,

Determination of the interrelationships of the operations – composition and documentation of technological interrelationships of operations,

Appraisal of the duration or volume of the activities – assessment of the number of time intervals, or volumes or activity, necessary for completion of particular operations,

Determination of the project resources (human, equipment, materials) and cost appraisal.

Schedule composition of the activities – determination of the sequence of the project activities fulfillment, duration of the operations and time distribution of the needs in resources and expenses, taking into account given limitations and interrelationships;

Budget evaluation – attachment of cost appraisal to particular project components (stages, phases, durations);

Development of the plan of project execution – integration of results of other subprocesses for composition of a whole document.

Determination of success criteria – development of the criteria for evaluation of project realization.

In case of negative forecast decision is taken about the necessity of correction measures, the choice of which is realized in the processes of modifications management.

Activity on project realization management, that is executed on different organizational levels and various parts of the projects, is itself requiring management.

Evaluation of sustainability of the project is in its technical-economical justification, that considering possible alternatives, defined on the previous stage. Each alternative version is assessed by cost and benefit criteria. Result of the stage of sustainability evaluation is justification of the one of alternatives.

Presented structure of project formation serves as a base for planning and forecast of the development processes of any phenomenon, in particular, of public health.

METHODOLOGICAL APPROACHES TO REALIZATION OF PROJECTS IN PUBLIC HEALTH

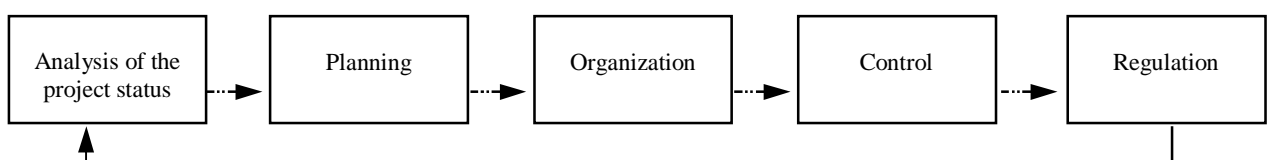
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Consideration and evaluation of activity on project management make possible to stress a number of aspects (approaches). The most prevalent of them: functional, dynamic, objective).

Functional aspect reflects a general approach to the problem of management and suppose consideration of the main functions of management (kinds of management activity): analysis, planning, organization, control, regulation.

Functions of management are considered to be a central definition: they are carried out at all levels of management activity, in each phase of project realization, for all its processes and controlled objects and subjects, that is demonstrated below.



Picture: Algorithm of decision making

Regulation presents by itself the next level of management and is starting the new cycle:

1. Analysis of deviations of the real situation from a plan;
2. Planning of activities on liquidation of deviations;
3. Organizations of activity on liquidation of deviation;
4. Control of realization of modified plans and etc.

Analysis of the status of the project is important in every moment when it is necessary to intervene the processes. The whole work on project is starting from analysis, and all elements of the project should be analyzed: time tables of activities fulfillment, degree of risk, financing, staff, course of projecting, supplies and realization of constructing and wiring works, quality of results and etc.

Planning is a fundamental function in the activity of project realization process, that was proved by the years of long practice in this field.

Plans of work on the project could be structured in accordance with division of the project on processes, reflecting the logic of project development from its initial stages up to completion of activities of project.

Each of these stages (or activities within this stage) is presenting by itself independent level in the structure of project realization process.

The most important direction of planning is evaluation of its cost.

Fulfillment of the developed plans of project realization is provided by organizational activity. Success of any project depends mostly on good personnel recruitment. Therefore the main object of organizational activity is creation of teams for work on a project and provision of their effective functioning.

Dynamic approach to project management is supposing consideration of the processes in time periods, connected with the main activity on project execution..

Objective approach considers objects and subjects of project realization.

Considering the given above information, we think it would be rational to apply classic approaches while choosing and realizing the most significant, priority directions in any field of activities of health care system.

SOCIO-ECONOMIC FACTORS OF EXTERNAL LABOR MIGRATION AND ASPECTS OF HIV EPIDEMIC INFECTION IN THE REPUBLIC OF TAJIKISTAN.

D.Ya.Kanoatov

Sudden decrease in a standard of living of the population, mass unemployment, especially in rural areas of the Republic of Tajikistan has led to an unprecedented number of external labor migrations. Half of the economically active population annually leave for seasonal and permanent jobs abroad, mainly to the Russian Federation and are amenable to various risk factors. The last problems are conditioned not only by social and economic factors, but also by medico-sanitary factors operating in the countries of their arrival. One of them is the growth in the level of indicators of HIV - infected migrants, mainly childbearing age temporarily being in unfavorable and prone to HIV infection territories. It is argued that there is an urgent requirement for combating this infection in all spheres of life of the society.

MAN-CAUSED CHEMICAL AND RADIATING RISK FACTORS FOR THE POPULATION'S HEALTH OF THE WESTERN KAZAKHSTAN

Sultanaliyev E.T.

To be given valuation of ecological risk factors for population health, living in the region of nuclear test site AZGIP.

To be learnt degree of water pollution in water sources, drinkable water of state wells, wild growing plants, root vegetables, cow milk and other agricultural production by technogenic toxic elements.

To be found correlation relationship between comments read chemical load of test site toxics coming with drinkable water, food products to human organism and population diseases according to disease classes taking prior places in the common structure of pathology.