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# FACTORS INFLUENCING BREAST CANCER PREVENTIVE PRACTICES OF OLDER WOMEN IN ALMATY, KAZAKHSTAN

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**Keywords:** Ethnic differences; knowledge about breast cancer; breast cancer preventive practices; Kazakhstan

## INTRODUCTION

Kazakhstan is a multicultural society with more than 100 ethnic groups. Of 16.8 million people in the Republic of Kazakhstan, Kazakhs are the largest ethnic group (53.4%), followed by Russians and Ukrainian (33.7%), and Koreans and other ethnic groups (12.9%). The incidence of breast cancer among the Kazakhstan women is steadily increasing being estimated at 33.5 per 100,000 in 1998. However, the use of preventive breast cancer examination and screening among Kazakhstan's multi-ethnic population is relatively low. To date, the reasons of the under-utilization have been little studied. No published studies have identified personal factors (e.g., demographics, acculturation, health status, knowledge and attitudes toward breast cancer prevention) associated with preventive breast cancer practices among the Republic's women. Moreover, little is known about how social and contextual factors, such as social capital, affected preventive practices in a diverse ethnic population. This study aims to fill those gaps by identifying and comparing differences in demographic and health characteristics of older women in three major ethnic groups (i.e., Kazakhs, Koreans, and Russians). Emphasis placed on preventive breast cancer examination and screening, as well as knowledge and attitudes of older women in these ethnic groups. The information from this study should not only illuminate the factors contributing to the variation in preventive health behavior among older Kazakhstan women in three major ethnic groups, but also help in formulating effective interventions to combat a life-threatening but preventable disease.

## RELATED RESEARCH

In 1998 the National Cancer Institute's Breast Cancer Progress Review Group, "*Charting the Course: Priorities for Breast Cancer Research*" report stated, "a tremendous amount of information has been learned about optimal screening activity as a function of age and level of personal risk. Far less is known about what personal factors influence variability in actual screening behavior among patients for whom regular screening is clearly cost-effective from a societal perspective. The behavioral aspects of screening hard-to-reach ethnicities, the issues of low re-screening rates, and the use of brief behavioral messages to foster screening behavior need further exploration." The research described in this study is responsive to recommendations in the Report of the Breast Cancer Progress Review Group. Identified health behavior (i.e., use of breast cancer screening) is viewed as a joint function of three groups of factors – predisposing, enabling, and need for care. These three dimensions of predictors have been also previously conceived as determinants of health services use (Andersen, 1968; Andersen & Newman, 1973; Wan, Odell, & Lewis, 1982).

Predisposing Factors: Predisposing factors are the beliefs, attitudes, and perceptions that may support or hinder behavioral change. Predisposing factors include breast cancer knowledge and screening, demographic information, Korean culture and health beliefs, acculturation, and social support.

Enabling Factors: Enabling factors are the availability of skills, facilities, and personal and community resources that may enable or hinder the change. Enabling factors include socioeconomic status and health insurance, and social capital.

Need for Care Factors: Need for care factors are an individual's perceived health, clinical conditions, and professionally evaluated health status. A variety of health status measures have been employed as proxy indicators of the need for care in health services research. They include both subjective (self-reported health) and functionally assessed health indicators.

To date, no published studies have identified how acculturation, communication factors, social capital, and health resources may be associated with breast cancer screening and examination among multi-ethnic groups of women. Therefore, the purposes of this study are: (1) to define and identify a specific health problem (in here, breast cancer screening and examination); and (2) to explore the factors that influence women's use of breast cancer screening and CBE.

## **METHODS**

### Study Design and Sample

A cross-sectional survey design was used. A purposive sample of 500 subjects was selected in November 2001 from three major ethnic groups (Kazaks, Koreans, and Russians) in Almaty, Kazakhstan. The sample consists of 124 Kazakh, 252 Korean, and 124 Russian women who were 40 years of age or older and not hospitalized at the time of the survey, and who had resided in Almaty for more than a year. The original study was designed to over-sample Korean women (N = 252) because of our interest in examining the cultural influences on preventive health practice, breast cancer knowledge, attitudes, beliefs, and behaviors of this group as compared to those in non-Korean groups (N = 248). The survey questionnaire, a compilation of several validated instruments, contains a total of 94 questions that exhibited validity and reliability (a copy could be requested from the senior author). Physicians were trained to conduct the interviews and the response rate was 100 percent.

### Measurement of the Variables

A reformulated behavioral model of health service use was guided by the work of Andersen and his colleagues (Andersen 1968; Andersen & Newman 1973). On the basis of the reformulated behavioral model, we hypothesized that an individual's predisposing, enabling, and need factors directly affect an individual's preventive health behaviors.

*Predisposing factors* were measured as demographic characteristics, level of acculturation, knowledge about breast cancer and prevention, attitudes toward breast cancer prevention, decisions about use of mammogram, and ethnic identification. Acculturation was measured by these indicators: speaking standard Kazakh at home, the level of preference for speaking and the comprehension of Kazakh, and ability to speak Kazakh. Knowledge about breast cancer and prevention was measured by the Breast Cancer Knowledge Test (Stager 1993), with 20 true or false questions. Attitudes toward breast cancer prevention were measured by the Attitudes toward Breast Cancer Screening Scale (Rosenman *et al.*, 1995), with six Likert scale questions (increase, no change, decrease, or don't know). Pro and Con scales were used to examine women's decisions about mammograms (Rakowski *et al.*, 1992). Ethnic identification was measured by how strongly respondents affiliated with their ethnic/cultural groups, using a scale from 0 (not at all) to 4 (very much). The adequacy of the measurement

model for acculturation, knowledge about breast cancer, and ethnic identification has been validated previously (Wan & Chukmaitov, 2003).

*Enabling factors* were defined as three aspects of social capital: (1) self-perceived trust, (2) self-perceived social involvement, and (3) self-perceived reciprocity/benefits (Kawachi *et al.*, 1997; Lochner *et al.*, 2002). Self-perceived trust was defined as the extent to which a person felt comfortable and trusted with others in the community, considered that people or public programs were helpful, and had interest in common with the community. Self-perceived social involvement was measured by the extent to which a person was involved in community affairs and the frequency of attending social activities. Reciprocity was defined as the extent to which the person reported benefiting from participation in public activities or program, having learned about available medical services in the community, and sharing common goals and interests in promoting health with others in the community. Each question was scored by a four-point scale, ranging from 1 (lowest) to 4 (highest). The adequacy of the measurement model for social capital was validated previously (Wan & Chukmaitov, 2006).

*Need for Care:* Health status reflects one’s propensity to use health services. Therefore, as measured for the need for care, the study used self-perceived health, using the SF-12 instrument and its scoring to calibrate the aggregate physical health score (Ware *et al.*, 2002; Ware *et al.*, 1993), and family history of breast cancer.

### Data Analysis

Descriptive analysis examined the socio-demographic characteristics of the respondents. Then, analysis of variance compared the differences in breast cancer knowledge, attitudes toward breast cancer prevention, and practice of preventive health behavior in the three major ethnic groups. Lastly, covariance structural equation modeling (SEM) technique, an extension of the regression method, was used to analyze the relationships of breast cancer knowledge and attitudes toward breast cancer prevention to preventive health behavior among older Kazakhstan women. The structural equation model was formulated and examined using analysis of moment structures (AMOS) software (Arbuckle & Wothke, 1999; Wan, 2002).

## **RESULTS**

Table 1 summarizes the demographic and health characteristics of the study respondents. The average age was 51 years. More than three-fifths were married (65%), with, on average, 2 children. Close to 70% were employed. On average, they had 14 years of education. The average physical health score (SF-12 PHS) was relatively high (46). The average for annual physician visits (2.5) was much higher than for visits to alternative medicine providers (0.6). Over 10% of the study respondents either had a family history of breast cancer (12%) or had been diagnosed with a breast-related disorder (15%).

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**TABLE 1.** Selected Demographic and Health Characteristics of the Study Sample by Ethnic

Groups (N = 500)

Individual Characteristics	<u>Mean or Percentage</u>				<u>F-value<sup>a</sup></u>
	Total (n = 500)	Kazakh (n = 124)	Korean (n = 252)	Russian (n = 124)	
Age (years)	51.30	49.98	51.54	52.11	2.22
Married (%)	65.20	69.35	66.67	58.06	1.99
Number of children	2.01	2.20	1.98	1.92	3.03*
Education (years)	14.28	15.30	13.98	13.86	8.99*

Employed (%)	68.00	70.97	67.86	65.32	0.45
Physical health score	85.75	86.29	90.28	76.01	
11.41*					
Annual physician visits	2.47	2.69	1.63	3.97	4.02*
Visits to alternative medicine provider	0.62	0.70	0.56	0.65	
Family history of breast cancer (%)	12.20	8.87	10.71	18.55	
3.26*					
Ever diagnosed with a breast-related disorder (%)	14.60	22.58	9.92	16.13	breast-5.59*

Note: <sup>a</sup> Difference in three groups. \*  $p \leq 0.05$

As shown in Table 1, several demographic and health characteristics were significantly different among the three ethnic groups. Compared to Korean and Russian respondents, Kazakh women, on average, had more children (2) and more education (15 years). Korean respondents had better average self-perceived physical health score (47) and fewer physician visits (on average, fewer than twice a year) than their counterparts. Russian respondents had the lowest average physical health score (44) and the highest average number of annual physician visits (almost 4). Almost one-fifth of Russian respondents had a family history of breast cancer. Over 15% had been diagnosed with a breast-related disorder. Of the three ethnic groups, however, Kazakh respondents had the highest percentage of breast-related diagnoses (23%).

Table 2 summarizes the use of three types of breast cancer examinations among the three ethnic groups. Overall, 83% of the respondents performed breast self-examinations (about eight times a year on average), but very few had ever had a mammogram (12%). Kazakh respondents had the highest percentage of those who had had a mammogram (22%), Russian respondents had the highest percentage of those who had had a clinical breast examination (70%), and Korean respondents had the lowest percentages for all three preventive examinations. Only the use of mammograms showed statistically significant differences among the three ethnic groups ( $F_{2, 491} = 10.29, p \leq 0.05$ ).

**TABLE 2.** Use of Breast Cancer Examination /Screening by Ethnic Group

Type of Breast Examination	Ethnic Group	N	Percent Mean	/SD	F-value <sup>a</sup>
Ever had self examination	Total	499	82.57	0.37979	0.230
	Kazakh	123	84.55	0.36288	
	Korean	252	82.26	0.38706	
	Russian	124	82.57	0.38357	
Times of BSE/year	Total	500	8.1840	17.53902	1.939
	Kazakh	124	10.7177	32.76563	
	Korean	252	7.7579	7.90638	
	Russian	124	6.5161	6.09743	
Ever had examination by physician for breast change	Total	498	62.85	0.48369	2.857
	Kazakh	124	65.32	0.47787	
	Korean	250	58.00	0.49455	
	Russian	124	70.16	0.45941	

Ever had examination by other provider	Total	500	52.00	0.50010	1.238
	Kazakh	124	50.81	0.50196	
	Korean	252	49.60	0.50098	
	Russian	124	58.06	0.49546	
Ever had mammography	Total	494	12.35	0.32932	10.288*
	Kazakh	121	22.31	0.41808	
	Korean	250	6.40	0.24524	
	Russian	123	14.63	0.35489	

Note: <sup>a</sup> Difference in three groups. \*  $p \leq 0.05$

Table 3 describes differences among three ethnic groups in knowledge about breast cancer, attitudes toward breast cancer prevention, and the decision to use mammograms. Although Korean respondents had the highest average score for breast cancer knowledge score (8.5), the differences were not statistically significant. A significant difference among three ethnic groups was found in attitudes toward breast cancer prevention ( $F_{2, 485} = 8.96, p < 0.05$ ). Kazakh respondents had the highest average score for positive attitudes toward breast cancer prevention, and Korean respondents had the lowest average score. Another significant difference was found in decisions about mammogram use. Of the three ethnic groups, Korean respondents had the highest average score, on both the Pro and the Con scale (Pro scale: 24.7; Con scale: 15.8).

**TABLE 3.** Breast Cancer Knowledge and Attitudes Toward Prevention and Screening by Ethnic Group

Knowledge & Attitudes Score	Ethnic Group	N	Mean	SD	F-value
Knowledge	Total	483	8.2133	2.63279	2.750
	Kazakh	123	7.9350	2.23144	
	Korean	241	8.4938	2.77957	
	Russian	119	7.9328	2.67040	
Attitudes	Total	488	7.6762	3.78228	8.960*
	Kazakh	122	8.6148	3.41229	
	Korean	247	6.9919	3.67810	
	Russian	119	8.1345	4.09821	
Pro-Mammogram Scale	Total	498	24.1446	4.73558	3.628*
	Kazakh	124	23.5565	4.77341	
	Korean	252	24.7063	4.72354	
	Russian	122	23.5820	4.61991	
Con-Mammogram Scale	Total	498	14.7450	4.65567	13.280*
	Kazakh	124	13.5000	4.46030	
	Korean	251	15.7769	4.61281	
	Russian	123	13.8943	4.48826	

Note: \*  $p \leq 0.05$

As shown in Table 4, both breast cancer knowledge (0.17) and attitudes toward breast cancer prevention (0.14) had a weak but statistically significant relationship with preventive health behavior. A woman's decision to use mammograms was positively associated with preventive health behavior (0.16). Self-perceived physical health (-0.15), education (0.11), and

social capital (0.14) were also significantly associated with preventive health behavior. The goodness of fit indices suggests that the model fit the data well.

**TABLE 4.** Parameter Estimates of the Structural Relationship of Use of Preventive Breast Cancer Care to Knowledge and Attitudinal Factors and Control Variables (N = 427)

Variables	Unstandardized Regression Coefficient	Standard Error Significance	Critical Value & Coefficient	Standardized Regression
Knowledge score	0.025	0.008	2.977*	0.170
Attitude score	0.013	0.005	2.466*	0.135
Pro decision score	0.012	0.004	2.760*	0.157
Con decision score	-0.016	0.005	-3.284*	-0.195
Age (years)	-0.001	0.002	-0.270	-0.014
Education (years)	0.013	0.007	1.960*	0.105
No. of children	0.002	0.022	0.083	0.004
Physical health score	-0.002	0.001	-2.778*	-0.149
Family history of breast cancer	-0.040	0.021	-1.934	-0.104
Ethnic identification	0.032	0.018	1.799	0.096
Acculturation	-0.068	0.035	-1.945	-0.109
Social capital	0.109	0.050	2.189*	0.142
R-square value	0.199			

Note: \*  $p \leq 0.05$

Goodness of Fit Statistics:

Chi-square = 704.742; df = 184; p = 0.0000.

NFI = 0.962.

TLI = 0.964.

CFI = 0.971.

RMSEA = 0.082

## DISCUSSION AND CONCLUSION

Overall, Russian and Kazakh respondents were more likely than Korean respondents to practice preventive breast cancer care. This preventive health behavior can be explained by

such health conditions as poor physical health or breast-related disorders or a family history of breast cancer.

Although Korean Kazakhstan women had considerable knowledge about breast cancer, they were the least likely of the three groups to use preventive breast cancer care, such as mammograms. Moreover, their attitudes toward breast cancer prevention were not as positive as the other two ethnic groups. Possible explanations of this finding may be cultural reasons such as embarrassment, or positive health conditions, such as good physical health and the absence of breast-related disorder.

In summary, both breast cancer knowledge and attitudes toward breast cancer prevention affect the preventive health behaviors of older Kazakhstan women. Knowledge about breast cancer or a positive attitude toward breast cancer prevention leads to practicing preventive care. Decisions about mammogram are also related to other preventive health behaviors. Decisions to use mammograms are associated with practicing preventive breast cancer care, and decisions not to use mammograms are related to respondents, not engaging in preventive breast cancer screening or examination.

Education influences older Kazakhstan women's preventive health behaviors. Education has a weak but statistically significant impact on use of preventive breast cancer care. This weak but significant relationship of education to preventive health behavior is consistent with previous studies (Bush 1998; Gardiner *et al.*, 1995; Lantz *et al.*, 1997; Lee & Vogel 1995; Makuc *et al.*, 1994).

On average, older Russian Kazakhstan women had the lowest physical health score and highest number of annual physician visits of the three ethnic groups. In addition, almost 19% of the Russian group had family histories of breast cancer. These findings may explain why the older Russian Kazakhstan women have the highest percentage of having had clinical breast examinations. A similar finding for the Kazakh women is that of the three ethnic groups they have the highest percentage of individuals who have been diagnosed with a breast-related disorder, which may suggest why the percentage using mammograms is relatively high as well.

We also found a significant and positive relationship of social capital to preventive health behavior. This result implies that participation in breast cancer screening programs depends in part upon the level of self-perceived trust, level of involvement with community activities, or self-perceived benefits from the preventive breast cancer care available in the community.

The study found a relatively low percentage of mammogram use in all three ethnic groups. Previous studies indicated that many women believe that in the absence of breast problems, there is no reason to have a mammogram (Bloom *et al.*, 1991; Burack & Liang 1989). This points to the significance that lack of information, misunderstanding, and misconceptions about screening regimens may have for older Kazakhstan women in general, and for Korean Kazakhstan women in particular.

In conclusion, positive attitudes toward breast cancer prevention lead to practicing preventive breast cancer care. The association seen in this study in Korean Kazakhstan women of relatively high educational level, relatively high incidence of breast-related disorders, and yet relatively low use of preventive practices presents a puzzle. It will be important to identify further cultural influences that might explain that discrepancy. The removal of cultural, educational, and financial barriers is imperative for promoting preventive breast cancer practices. The identification of ethnic differentials in health and health care can help preventive programs to effectively target the underserved populations for educational and clinical interventions.

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# MORBIDITY OF WOMEN OF REPRODUCTIVE AGE RESIDENTS OF KHORSM OBLAST AND ITS CHARACTERISTICS

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The main goal of our research – is study and assessment of the morbidity of the women of reproductive age in the ecologically unfavorable Khoresm Oblast of Republic of Uzbekistan (hereinafter – Oblast) on the basis of medical aid appealability to the medical organizations of the Oblast and performance of the comparative analysis of the received results with the average indicators in the Republic and ecologically more favourable Tashkent Oblast.

## Materials and methods

For the purpose of studying the morbidity of women of reproductive age the data received from the Center for the processing data of the Ministry of Health of Republic of Uzbekistan, Oblast Directorate of Health as well as the results of the performed medical examinations were used. Statistical methods of social hygiene and sanitary were employed for the statistical analysis of data.

From the provided statistical data and the results of own research it can be stated that the morbidity among women of reproductive age of Khoresm Oblast (1998-2000years) is higher than in Tashkent Oblast and in the Republic in general, both when comparing official statistical data and the own results. High medical aid appealability on diseases was registered among women of the age of 25-29 years old (1066,0‰).

The analysis of the medical aid appealability to medical organizations of women in the reproductive age in all regions under the study during the years 1996-2000 revealed that the morbidity in Khoresm Oblast decreased 1,7 times from 1996 to 1997 year and did not change significantly in the following years.

## Conclusions

1. General morbidity of women in Khoresm Oblast is 7% higher of the morbidity level of the whole population of the Oblast, and the morbidity of women of reproductive age is 46,8% higher than the morbidity level among women in the Oblast
2. General level of the morbidity of women in the Oblast is 1,5 and 1,4 times higher than the average level in the Republic and the level in Tashkent Oblast respectively
3. Diseases of blood and hemopoetic organs, organs of sense and nervous system, circulatory system and respiratory tract, gastrointestinal tract and urino-genital tract make up 74,3% of the all diseases revealed among women of reproductive age in the Republic, 69,5% - in Tashkent and 68,2% - in Khoresm Oblast

# ANALYSIS OF THE STATE AND FORMING OF HUMAN RESOURCES IN HEALTH CARE

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The problem of human resources provision in modern conditions is a key factor of successful functioning of health care system in the conditions of reforming. The underlying factor of health care system reforms is accepting effective measures on forming such human resources policy that should account existing transformations in the country and health sector and enable not only to preserve the existing human potential but also to change it qualitatively and adapt to the new conditions of the socio-economic development of the country.

In the most countries of the world human resources planning in health sector follows the main five directions:

- 1) Determination of the optimal correlation of the amount of medical personnel and the population of the country;
- 2) Regulation of the acceptance to the medical institutes and determination of the long-term perspective evaluation of the number of future health care workers;
- 3) The assessment of the demand for specialists, occupied in separate health fields;
- 4) Assessment of the demand for bed resources and duration of the stay in the hospital;
- 5) Comparison of the volumes of used resources and standards with the practice, accepted in other countries.

Currently in the Republic of Kazakhstan there are working more than 53600 physicians and 115848 nurses.

Supply with the physicians is 35, 6 for 10000 population. The correlation of nurses is 76,8 for 10000 population..

For the territory of Kazakhstan quite high unevenness in the distribution of medical personnel is typical. For example, in Almaty and Astana the figure of provision by physicians for 10000 population is the most high in the republic and makes up 76,9 and 60,0 correspondingly. While in Almaty and North-Kazakhstan oblasts it is 20,2 and 23,7 correspondingly. The highest index of provision with nurses is typical for Kyzylorda oblast – 104,0 and Almaty city – 90,6. The less one –in Almaty oblast and makes up 48,3.

Supply of the population with the physicians of therapeutic profile is 8,4 for 10000 population; with the specialists of the surgical profile is 4,1.

In the structure of medical cares the specific gravity of the physicians of primary health care is 10,7%.

Provision of the medical organizations by physicians and nurses is 96.2 и 98,2 correspondingly. At that quite high percent of the combination of medical positions preserved and it makes up 18,5%. Combination of medical positions of the middle level 4.3%.

Despite the existing problems in health care system, the profession of the medical worker continues to attract university entrants. This fact proves not reducing competition during acceptations of university entrants into medical institutes and colleges, making up from 2 to 49 people for 1 position depending on the specialty and language of education.

Forming of medical personnel and of high and middle level is provided by the existing system of high and middle medical organizations, which include 6 governmental, 3 nongovernmental institutes, 1 medical faculty, 25 governmental, 19 nongovernmental medical colleges and faculties under 4 governmental medical academies.

Contingency of the students on September 1<sup>st</sup> 2005: in the medical colleges by the governmental order it made up 8086 students (34, 7%), on paid base - 15152 (65, 2 %).

In medical institutes – 10180 students or 41,6% are studying by governmental educational grant; on the paid base – 14225 (58,4%), including 1671 foreign students.

Training of the medical personnel is realized on 8 specialties of higher medical education: medical, pediatrics, dentistry, medical-preventive, pharmacy, medical-biological, oriental medicine, nursing and on 8 specialties of the medical education of middle level: medical, obstetric, gynecologic, hygiene and epidemiology, pharmacy, dentistry, orthopedic dentistry, laboratory diagnostics, nursing. In general, in the medical educational organizations the whole spectrum of the specialties is presented, according to which the training of health specialists is realized – both under- and postgraduate training.

The total number of the teaching staff in the medical educational organizations is 3506. The teaching staff with academic degrees is 45,0 %.

During the last years (since 1999) student contingency of the medical institutes is formed on the competition base for studying by governmental grant. At that, the tendency for the annual increase of the amount of governmental grants is observed. So, if in 1999-2000 acceptance by the governmental grants was 1050 people, in 2005-2006 this number was 2230. And this tendency is going to be kept within the next few years. Alongside with studying by grants students are accepted to the institutes and colleges on the paid basis also. At that, if in previous years there was kept rather high percentage of students who pay for their education: 60-70%, than because of the increase of the threshold entrance demands beginning from the last year this figure was about 40%. Thus alongside with the increase of education accessibility by the governmental educational grants the requirements are becoming more strict for the students who choose medicine as their future profession.

Normative duration of the medical; education of high level is from 5 to 7 years, the seventh year of training for clinical specialties of medical education is organized in the form of internship.

Training in internship is realized in accordance with the demand of territorial health bodies on the main medical specialties.

According to the governmental order the enrollment to the postgraduate research course is 63, to residency – 90, magistracy – 50, PhD program – 33. In the frame of training and retraining program at the expense of the state budget annually about 15000 specialists are training.

Enrollment to the medical colleges for the years 2005-2006 was 8075 students, out of whom 2665 – at the expense of state budget, 5410 – on the paid base.

Annual number of graduates from the medical institutes is about 2000 people. In the medical colleges this number is more than 4400 people.

Training on medical specialties of the middle level is realized in 2-3- years.

During the last years the structure of the enrollment on different specialties has changed: number of available places at the expense of the budget by the specialty “dentistry” has decreased, increased the number of students studying on the specialty “nursing”. On the postgraduate level the number of physicians training by the specialty of the general practice, phthisiatrician has increased, there was started training in the magistracy by the specialty “health management”. All these are the part of the current reforms in health sector.

The volumes of health specialists training are formed on the basis of existing demand of the health sector in medical personnel. However, it should be stated, that until now there was no systematic work on forecasting the demand for particular health specialties, there was no evidence based approach with deep analysis of the existing human resources situation.

The general state of human resources provision was negatively influenced also by the refusal from the previous system of distributing medical graduates. All these of course are the reasons of the insufficient personnel provision of health system, including: insufficient number of specialists engaged in primary health care, concentration of the medical workers in the urban places, mainly in big oblast centers, at the presence of low staffing of the medical organizations in faraway regions and rural areas, and also maintenance of the rather high percentage of medical workers of the pre-retire and pensioner age.

Many component factors are influencing the human resources for health: working conditions, adequate payment, accessibility of the medical education of high and middle level, possibilities for postgraduate training of the specialists.

In order to solve existing problems in the sphere of human resources for health the following is necessary:

- Further development of grounded system of the governmental order for the quantity and structure of medical personnel training, primary specialization of the medical graduates based on thorough analysis of the personnel structure and its movement;
- Working out the question of reestablishment of the mechanism of governmental distribution of the students, studying by the governmental budget, development of the special form of specialists training;
- Purposeful work with the territorial health boards on the estimation of the general demand in medical personnel;
- Improvement of the system of monitoring, regular analysis and forecasting of medical cadres development;
- Creation of the facilities for regular improvement of the qualification and retraining of the medical personnel.

## **HUMAN RESOURCES PLANNING IN HEALTH SECTOR**

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Currently the problem of improvement of the health care system management is one of the priority directions of the health sector development.

In his message to the people of Kazakhstan “Towards competitive Kazakhstan, competitive economy, competitive nation!” the Head of the government stressed on necessity of conduction of serious reforms in health care system, including the part of health sector management improvement. In the Governmental program of sector reforming and development for 2005-2010 there were reflected the steps turned towards this direction.

Management contains coordination and integration of the organizational resources for the achievement of put goals by the most effective means. Management includes in itself planning, supervision and control, organization and decision making process, research in the area of resource’s utilization (1).

Planning is characterized as determination of the goal of managing objects’ development and means of its attainment, and development of the implementation plan (2).

Besides that, planning is determined as program cycle component, implemented after the analysis and including the process of selection of priorities, goals and objectives, ways and means of realization for their achievement, and forecasting resource and other costs and results (3).

At that, while planning in health care it is necessary to take into account the questions of health economy, ways and methods of rational and effective utilization of material, financial and labor resources in the health field (4).

Among the health resources there are financial, material, temporal, spatial as well as human resources (1).

The term “human resources” characterizes the staff of the organization or labor resources of the sector, of the region’s territory, country in general by its qualitative and completeness sides. The given term also means the creative ability and potential possibilities of comprehensive development of the workers, general culture and moral reliability, perfection of labor interrelations, motivation, enterprise and etc.

Semantic content of the conception “human resources” is closely related and corresponds to such concepts as “personnel potential”, “Labor potential”, “intellectual potential”, surpassing in scope each of them taken separately (5).

Planning of human resources is determined as a “process of providing the organization by necessary amount of qualified staff, hired on proper position in a proper time” (6). By the another definition, personnel planning – is a “system of selection of qualified personnel, using two kinds of resources – internal (of the organization itself) and external (attraction from the outside of organization), with the aim of providing organization’s needs in the necessary amount of specialists in specific time frame (7). According to the definition of Russian specialists cadre planning is a directional activity of the organization for staff training, provision of proportional and dynamic personnel development, estimation of its professional-qualification structure, general and additional needs assessment, control over its utilization (8).

People ware in the modern conditions is a key factor of successful realization of reforms being conducted currently in health sector and medical education system.

Increase of the scope of material-technical provision of the sector, complication of the organizational forms of medical care provision, medical science development, and increase of the number of other factors influencing on the sector development and need in medical care and health resources, from one side, increase the number of realistic possible ways of the system development, but on the other side – complicate the problem of selection of the best choice of planning. Research in the sphere of planning normative theme facilitates the development of the criteria of optimum planning decisions (4).

The attempt to systemize the steps of cadre planning process was done by us. So, the following basic steps are existing currently:

- Analysis. Assessment of the available resources and its potential;
- Forecast.

Determination of future needs (general number, necessary qualifications, territorial and time characteristics of the future personnel, which are needed for putted goals attainment).

Determination of the additional need in personnel taking into account available staff of the organization and future university graduates contingency;

- Actions aimed on the fulfillment of the need in personnel.

Effective human resources planning could be presented as the order of above described actions.

As it could be seen from the above presented material, one of the most important steps in planning is forecast of the development and modeling of the processes and status of managing objects.

Medical cadres – is one of the main components in health budget, therefore their rational utilization and management over them are of a highest priority. The problem of rational spending of the resources given for health personnel training is also very important for our republic.

Selection, training and usage of the specialists should be realized so as to provide the maximum best organization of the work of health specialists with the maximum usage of available experiences and knowledge (1).

Up for today forecasting of the need in health personnel was realized taking into account experts opinion and was guided mostly by the current needs of the sector. Along side with it, the objective of determination of the need in specialists for the nearest and further perspective is quite complicated and require comprehensive and thorough scientific base.

Further, qualified interpretation of the results of cadre processes forecast in health sector will become the base for their wide application in the practice of management activity.

**THE UNITED STATES OF AMERICA IN VIEW OF THE KAZAKH SPECIALIST,  
HEALTH MANAGER.  
Zh. A. Yemberdiyeva**

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Kazakhstan School of Public Health

Studying of US's experience is useful for our country, especially in the humane social sphere as health care. Nowadays the Republic of Kazakhstan being as the post-Soviet country still has kept elements of Semashko system. Many our health care organizers mistakenly consider that if we have public health care, then also experience of countries with similar system must be studied, and health system of the USA - entirely being as private, represents the unsystematic, uncontrollable and spontaneous organization. According to literature, for the last years USA have promoted in field of medical care organization and medical technologies seriously, that their experience became a subject of studies by other countries. Therefore, group of specialists – health managers of Kazakhstan has been directed to one of the leading universities of the USA - Virginia Commonwealth University, which has good department on health administration. This six-months training has been organized by Ministry of Health of the Republic of Kazakhstan, in a frame of “State program of reforming and development of health care of the Republic of Kazakhstan for 2005-2010” and Department of Health Administration, VCU. I am participant of this program, and wish to share observations, an estimation of reality, and the knowledge received during the training.

The first we have seen - undoubtedly, presence of very high level of medical technologies (preventive, diagnostic, medical and rehabilitation), biotechnologies, manufacture of medical products and materials, rigid and extremely effective control of the medical products' and food products' quality. There are striking examples - Gamma Knife (a laser knife for removing tumors of brain), da Vinci Surgical Robot (the operating robot), eICU (electronic Intensive Care Unit), the robot for selection of medicine and many other things. It is possible and necessary to learn, carrying out an exchange of experience and specialists. And there is a high level of biomedical researches, presence of research data with ramified system of access, high level of health statistics by the example of Chesterfield County's Department of public health, an analogue of regional public health department in Kazakhstan. Its general mission is to protect, preserve and promote optimal health for the community through the superiority in public health services. The most actual programs of department are struggle against risk factors, the drinking water and natural sources' quality control, vaccination of children, health protection of mother and child, family planning, prevention of HIV/AIDS, STDs (sexually transmitted diseases). In the USA there are organizations of independent residence for older people (eg. Williamsburg Patriot's Colony), where people of old age can live and communicate by interests, and have high-grade

medical, social service. We were made sure of there are a lot of research centers well-known for all over the world (for example, Mayo clinic) and scientists, that's why the interest of specialists from different countries to medicine and medical science of the USA is rather high. And it is fair enough.

Also we noticed most of Americans (up to 85 %), usually showing healthy conservatism and are not interested in big changes, show dissatisfaction with health system to one or another extent. It means the point is not only level of medical care and constantly updated technologies, then also an organization of care, i.e. its availability, coverage, quality, system and many other aspects. It is one of our similar problems.

Except the health system, in the USA it is necessary to objectively know local conditions, standard of living, population needs, characters of the Americans themselves and their habits. Kazakhstan and American people have many differences and in conditions of life, in problems of health and healthcare, and in mentality. The possibility to change the mentality of our health managers and administrators is a general goal for us posed by Ministry of Health of Kazakhstan in this training program. Thus from the point of view of effective management and leadership there must be known, what are we?

For Americans the most priority and prestige social values are – healthcare system, education, social security, and science and culture, in our republic – these issues are on the last place. For comparison - share of the Gross National Product allocated for health system in US is 15%, in Kazakhstan - 2.2%. Each American student knows, what he/she needs to study at the university for, our youth, as a rule, often get into the situations when they do not know, where to go to work after graduation. In America brainwork is valued more than physical work, profession of the doctor, teacher, lawyer, banker, and scientific work are the most highly paid in the country.

As for political life, Americans inherently are very law-abiding people. They are ready to pay taxes from each additionally earned dollar in contrast to our businessmen. Laws are being accepted to fulfill them, and not to avoid and execute it sufficiently. First of all, American judges protect the interests and rights of citizens. Each citizen can easily change a residence, and work without worrying about future. They get their salary for job, for executed work, in our country - for conformity to the category and job position. Here, in US it is easy to live for credit without cash, in Kazakhstan it is still difficult to imagine. All services harmoniously work for the person. I was very much touched with care of people with physical defects, invalids (in US the rights of disable people are approved legislatively and incorporated to the main system of civil rights, which forbids a discrimination of people; the basic act is Law of 1990 "About invalids" which fulfillment is strictly supervised by federal organs of each state). They do not feel discomfort as they can lead a high-grade active life - they study, work, go to theatres and concerts, use public transport, do sport and many other things. It is possible, because everywhere - in any building, restaurant, sport center, metro, and bus there are special equipment for their movement. Unfortunately, invalids in our country are deprived all of that. They even cannot go out of own house at all. Since the childhood each American learn to feel the pride of the country, they thoroughly fulfill the individual sovereignty and inviolability and we are grown up in the collectives and on public sense. Such number of national flags on the streets, in the buildings, offices you will not meet in any other country. And though Americans are natives of the different countries and continents and all of them settle by a national principle (the Chinese, Latin American blocks), and as it is written in the Constitution they name themselves: We are American people. As Kazakhstan is the multiethnic country too, I think, here is our similarity.

Good fulfillment of the individual rights leads to if, for example, the American will pass near to you on the street he or she will certainly smile and apologize, as he or she has trespassed on your personal space. The same trait leads to, for example, if the person is representative of ethnic or sexual minority, then he should not to be afraid of loosing the job or other social welfare.

Americans have made themselves, have made such kind of people who are: attractive, enterprising, moderately open-minded and moderately close-minded, smiling, business-like, able to value the time and money, constantly aspiring to competition and proud of their own right to choose. The main aim of the American nation is belief, first of all, in itself, support and relies on their own abilities and potential, and nowise on the help of friends, or the government. The most often sounded word of them is freedom, - a word, which is a key to understand psychology of each American. And independence feeling is so high, that since youth up children try not to depend (first of all, financially) on parents, and parents do not depend on the children. Thus, America is rather contradictory country, and these contradictions are shown in all fields of activity, including public health.

## **SOME FEATURES OF HEALTH INSURANCE IN THE USA HEALTH SYSTEM**

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### Summary (abstract)

This article presents a modern private insurance system of public health of the USA. Economic tools which can be used by health care executives and managers. Also current critical evaluation a condition of private insurance from the view assessment of social needs a society.

There are few classical models of healthcare and, considering systems of the different countries, we cannot tell exactly what model is on its basis. Today systems have changed by adopting the most successful elements of each other that no one of the countries has such models just as it is. This known classification includes:

1. Mainly state model (England, Norway)
2. Mainly insurance model (France, Germany, Japan)
3. Mainly - private (USA).

We are mostly interested in experience of US's health system, which is one of the largest sectors in American economy where are concentrated huge resources. The medical industry forms the one seventh part of all national economy where above 10 million persons work. Now offered a program of reorganization of the American healthcare and its radical modernization are directed to creation of the insurance market regulated by government, to the vital distribution of not only voluntary, then also mandatory insurance for providing the medical care access for all groups of the population. Government's activity in health sector renders a multilateral influence on the American society. The system policy practically affects essential interests of all strata, groups and classes of a society, and it is in center of political life of country. Private medical system of insurance exists within the framework of government legislation which determines stimulus and directions of its development, provides the state control and today, slowly but there is implementing policy of decreasing of insurance benefits for people of middle class.

Health system of the USA is financed from a few sources which can be divided in two groups:

1. Public

## 2. Private.

Public sources which are under control of the government, and going to programs of the state guarantees of health care are the federal and regular budgets. Private sources are obligatory assessments of employers, enterprises to programs of supporting elder people (Medicare), poor (Medicaid) and invalids. Who pays for medical care of American citizens and where these means are from?

There is no other such country, except the USA, which at unprecedented national riches simultaneously would have huge number of the citizens who do not have money to pay for medical care. The payment system of care through the individual insurance has made creation of excellent medicine as possible, which would carry out the number of the most complicated and expensive interventions. Thus the government provides financing of medical care for suppliers (hospitals, physicians, etc.), using insurance companies of managed care. The key moment of this model is the managed competition, i.e. when market is presented by strong buyers, consumers of medical services. They decide themselves - what kinds of services, whose services and when to buy. Patients involuntarily become members of the insurance companies, pour in payments, conduct search of suppliers, and the insurance companies only compensate cost of services to them. It is not quite successful process of health system of the US today as consumers (patients) have to buy expensive services. Whether they can be united in greater associations or the organizations of patients and thereby to resist to the price policy of suppliers? The answer – both “yes” and “not”. Because, large incorporated hospitals, medical organizations HMO (Health Maintain Organization) which render qualitative medical care, will be have to reduce their expenses due to benefits, and insurance companies will offer patients an insurance with the minimal medical services with a goal of economy of money. In this situation consumers are in not advantageous position again. The more poor people, the more public coverage to provide medical care. The number of people, who do not have insurance, does not decrease; the increasing cost causes new efforts to reconstruct a package of services which are included to medical insurance and coverage. Nowadays in the USA medical insurance's coverage amounts: at the total number of population about 300 million - public insurance for 85 million persons (Medicare, Medicaid and invalids), 170 millions by private insurance, 44 millions of people who don't have medical insurance, by other words the guaranteed access to medical services. Situation when neither worker (because of the small salary), nor employer (with goal of economy of company's resources) do not want to pay insurance payments. It is a serious problem for the USA, connected with political, economic changes and growth of expenses for healthcare. In dynamic of the price for health care grow more quickly, than for other rest. If in 1970 expenses have amounted 73 billion dollars in a percentage ratio of gross national product (GNP) is 7%, in 2002 - 1553 billion, percent of GNP - 14.9 %. In the USA there is no "global" budget and no sufficient coordination among the parts of system. Instead of it there is a chaotic system - consumers (patients), insurers, suppliers of medical services and appeared fourth side are buyers (intermediaries) of medical services. All of them function independently from each other and usually aspire to different purposes that in general promote growth of medical services' cost and, as consequence, their inaccessibility. If it is clear with three first participants of the system, then who are the buyers?! As a rule, employers of large national companies play their role, sometimes government does it. They define what category of people will be included into this insurance, which medical services and interventions will be base of the basic insurance package, define the prices, can reduce or raise them as a result of negotiations with strong labor unions. Labor unions, uniting workers in groups, promote creation of good insurance benefits. For example, the best insurance benefit at General Motors among many moto-car companies considering a rigid competition in the world market. System of medical insurance is acting as the guarantor of providing the medical care for the population - state and private, i.e. the third side which pays to producers of medical services.

Despite of growth of medical insurance payments, the system of private insurance does not guarantee full coverage of all received medical services' cost to the patient. The grouped

private medical insurance, rigidly connected with a workplace, harbors a threat of negative consequences for workers in circumstances of losing or changing the workplace and as consequence - absence of choice of physician. This revolution, which is now in healthcare of the USA, when suppliers do not want to have low insurance payments, and patients do not have a freedom of choice, and the government has to increase costs to healthcare.

Therefore the system of private insurance from the point of view of social needs of a society is insufficient. It is necessary for US to strengthen an existing state programs Medicare and Medicaid and active support of "managed health care" as they are important mechanism in achievement of social balance in a society.

#### Acknowledgment

To Robert E. Hurley Ph.D, Associate Professor, Department of Health Administration VCU.

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## **TO THE ISSUE ABOUT POSSIBILITY OF INTEGRATION OF THEORETICAL MODELS OF NURSING INTO PRACTICE J.K. Buribaeva**

National Center for the problem of healthy lifestyle development

We have made deep analysis of theoretical models in nursing, at the same time main attention was given for studying their practical significance for our health care system. The issue first mentioned at the beginning of 20<sup>th</sup> century in the USA about determination of obligations and relationship of nurses with patients and personnel is still important for Kazakhstan. The concept "nurse is doctors' assistant" is the basis for medical nursing staff training programs that have been dominating in our country for several decades.

Several ponderable and interrelated factors determine situation, such as political factor, factor of authorization, crisis (or postcrisis), passive, educational, societal, technological factors, as well as medical factor.

The possibility of using examined theoretical models of nursing in Kazakhstan is restricted due to incompleteness of organizational environment, educational conditions and theoretical basis of nursing in the republic. Therefore, the possibility of integration of nursing models in Kazakhstan is restricted by the influence of three factors, such as organizational, educational and theoretical.

The need of improvement and further development of nursing require solution of theoretical issue of duties definition, responsibilities and relationship of nurses with patients and personnel. At the same time it is important to mark two ways for issue solution: development of Kazakhstan nursing models or experimental approbation and introduction of available models. The condition of nursing models' use in local health practice is needed for educational system's restructuring, including ideology substitution, review of curricula, teaching of disciplines by nursing specialists and conduction of experiments on clinical sites.

## **CHILDHOOD DISABILITY IN THE REPUBLIC OF KAZAKHSTAN AND HUNGARY, 1990-2002**

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According to literature about 10% of the world's 6.3 billion population are disabled and WHO predicts that the number will be doubled. Disabled people or people with developmental disorders have special status in the social category of disadvantaged people.

The problem of disadvantaged people in particular disabled children is important and there are not enough data nowadays in Kazakhstan. The proportion of disabled children, as the most vulnerable from the poorest population is 12.8% (more than 47.7 thousand in 2002) from all disabled people and 1% from total children population. In Kazakhstan for the last 12 years childhood disability increased almost twice. In spite of the guaranteed by Constitution and other legislative documents- medical and social care, protection and equal opportunities in realization of economical and political rights and freedoms, in practice things are much more complicated.

The aim of this work was to investigate the trends of disability among children and produce an overview of services provided for children with mental and physical disabilities in Kazakhstan and Hungary between 1990-2002. The most important difficulty was the interpretation of Kazakhstan data from various sources since these were controversial and incomplete. The investigation of time-trends in Kazakhstan were limited by the fact that data presentation was changed in 2000 from those on children under 14 years of age to children under 16 years of age. According to the available data, the prevalence of child disability increased twofold between 1992 and 1999 (466.8 per 100 000 of children population under 14 till 977, respectively) but stabilized from 2000.

This was also supported by a double increase in the rate of new cases with disabilities in Kazakhstan from 75,2 per 100 thousand of children population <14 in 1991 till 148 in 2003. Due to lack of information, it was impossible to further investigate data on disabled children in detail (by age distribution, types of disability, etc.). Increased disability was well-defined in certain regions (Western Kazakhstan, Eastern Kazakhstan, Kyzyl-Orda, South Kazakhstan) that might be due to ecological problems and higher morbidity rates as suggested by other researchers in the field.

Incomplete statistical reporting and disability criteria for identification of children with mental and physical disabilities, as well as underreporting in Kazakhstan are the main reasons for low figures of disability prevalence in compare with Hungarian (data was collected from statistical sources by author). Though, the percent of disabled children among all disabled people was 2.6-fold higher in Kazakhstan than in Hungary in 2001. Only a slight increase (1571.3 to 1702.3 per 100000 children under 14) was observed in Hungary during a decade in children's disability for which only censuses provide comprehensive data. In 36 % children's disability in Hungary is due to mental disorders and 12% is due to physical disorders.

The second objective was to compare medical, social, psychological and pedagogical provision for children with disabilities by state and public organizations in Kazakhstan and Hungary. Various legislative documents assuring rights and social guarantees for disabled children in Kazakhstan and Hungary were studied by us. In Kazakhstan a "State program of rehabilitation of disabled for 2002-2005", Law "On Social, medical and pedagogical correctional support of children with disabilities", and Law "On Social protection of disabled people in the Republic of Kazakhstan", as well as Hungarian "State health program of "Johan Bela" –National Program for disabled people" were developed and approved.

According to our findings the distribution of services in Kazakhstan (social disability benefits, working NGOs, etc.) does not correspond to the distribution of disabled children. Contradiction was observed in the data from the Ministry of Labour and Social Protection of Kazakhstan that collects information on disabled children. The number of beneficiaries of social allowances does not equal the number of disabled children, and the geographical distribution also does not fully overlap. Besides medical and social care provision intended for children with disabilities is lacking due to its dependence on the restriction of vital functions' limitation of disabled children.

In this aspect public sector contributes greatly and provide various addressed services in both countries in terms of advocacy of rights, training of professionals, development of models of social inclusion and rehabilitation, as well as encouraging families with disabled children and their helpers.

One of the work conclusions was acknowledgement of the need to create special conditions for deep complex analysis of data on disability on various aspects for development and integration of effective activities on prevention and reduction of child disability in Kazakhstan and Hungary.

Based on our findings, several recommendations were drawn; in particular an urgent need of full evidence-based approach for creation of comprehensive state statistical reporting system on children with disabilities, as well as introduction of state monitoring system on disability investigating primarily addressed care. Besides there is a need of existing data to be reanalyzed, data computed and made comparable across the years.

As to services, a complex approach is needed for children with mental and physical disabilities in Kazakhstan which involves interdepartmental collaboration of public health professionals, as well as specialists from education and social care systems. In particular, it's important to work out all levels of cooperation of state and non-governmental sectors with direct involvement of people with disabilities and their families.

It is important to improve further other determinants of health such as income, education, work opportunities, maternal and child care, environmental sustainability by governmental interventions both for disabled and healthy people to increase their quality of life.

This work draws attention to the importance of information on disability and on social support systems in the form of valid and reliable epidemiological data which are not only necessary to make research in this field easier or possible at all, but also because a proper analysis of the situation provides that solid basis upon which planning and development of preventive and rehabilitative services can be built to enable all disabled people to fulfill their potentials.

Table 1. Selected indicators of disability and associated issues in Hungary and Kazakhstan

	Hungary		Kazakhstan	
	1990	2001	1992	2001
Children under 14 years of age (in thousands)	2 131	1692	5346.4	4 963 <sup>3</sup>
Total number of disabled children < 14 y.o.				
Rate of dis. children per 100000 of children<14	33485 1571.3	28803 1702.3	24955 466.8	49433 <sup>4</sup> 996
Newly recognized cases of disabled children in the given year	N/A	N/A	4552	8207
Rate of newly recognized DC <16 per 100000 children < 17			75.2	165
% of disabled children from all disabled (including adults)	9.10%	5%	7.4%	12.8%
% disabled out of all children <14 years of age	1.6 %	1.7 %	0.47%	1%
Rate per 100000 <16 of children receiving disability allowances	N/A	N/A	446.8	1156
% living in social institutes out of all disabled children	13.7% <sup>2</sup>	9,7 %	12.4%	5.8%
# of residential institutions	39 <sup>1</sup>	31		17
% of children with physical disabilities	11	12%	N/A	N/A
% of children with mental disabilities	51%	37%		
Rate of children with developmental delays per 100 000 of <14 years old children (surveys of pre-, school- age children)	N/A	N/A	2051.8 (1980.1 <sup>6</sup> )	2536.1 <sup>5</sup>
% of children receiving special education out of revealed by PMPC children with developmental delays (in previous column)	N/A	N/A	69%	62%

<sup>1</sup> data for year 1995

<sup>3</sup> children under 17 years old

<sup>5</sup> data from year

2003 for children under 18

<sup>2</sup> data for year 1993

<sup>4</sup> children under 16 from 2000

6

children under 15

¶ Source HFA database, updated 2004

N/A – not available

**MEDICAL AND SOCIAL EVALUATION OF THE SHADOW HEALTH SECTOR**  
**M.A. Kamaliev, S.S. Buzdaeva**

Kazakh National Medical University named after S.D. Asphendiyarov

Kazakhstan worldwide is the leader in the Central Asian region on the levels and speed of social and economical development, as well as system development of corruption counteraction. The law # 267-1 of the Republic of Kazakhstan legislation on “Struggle against corruption” from July 2, 1998, as well as establishment of National committee on corruption combating and official ethics observance by officials and other activities confirms it. Systematic and consistent approach in corruption counteraction program in Kazakhstan is marked by local and international experts. At the same time 40-70 % of these experts included hospitals and health care institutions into the area of corruption and bribery authority.

In spite of WHOM opinion about patients’ extra charge for medical services that leads to enhancement of social inequality and medical care limitations of availability, some countries introduced their schemes of expenses’ refund when patient, partly state or insurance company can pay for medical services. Separation of financial responsibility and partial transfer to consumer is known as “co-payment”. According to Law “On citizens’ health protection in the RK” among various financing sources of state health care system (art. 41), co-payment is provided in addition to guaranteed benefits package in hospitals and out-patient clinics in Kazakhstan.

Within budget constraints every health care organization is interested to attract additional funding sources and develop the sector of paid medical services which is well-founded and naturally fits in market reality of modern society. However, there are other trends of work commercialization when expenses of medical services are “shifted off” to patients. This is a regular process for unformed civilized market.

According to data of the Russian foundation “Informatics for democracy”, minimal expenses of Russian population for common bribes are 3 billion USD per year. In reality the sum can be 3 to 5 times higher and health care system is the leader taking 600 million USD per year.

A survey of 2000 urban and rural Kazakhstan citizens in 2000 have shown that in every 5<sup>th</sup> case (19,7%) respondent, who receive treatment have rewarded doctor with money or gifts and the occurrence is more often in the south of country (Kyzylorda, Almaty, South Kazakhstan oblasts and Almaty city).

According to survey data taken place in Almaty city and Almaty oblast in 1999 with 6781 respondents (2031 families) it was identified that 28% of respondents personally (33,8% of urban and 22% of rural) or by any family member informally paid for medical care for the last 12 months. Among all state medical organizations the highest amount of informal payment were established in hospitals often in rural area compare with urban.

In 2003 according to survey data 30.9% of patients paid for their medical care among 12000 households. To study prevalence and character of informal charges in medical organizations of Almaty city a complex medical and sociological study was conducted in 2000 with 1508 respondents and 507 respondents in 2005, who received surgical and trauma medical help with life time of hospital discharges not exceeded 9 months.

Statistical whole was formed by random sampling of hospital registers. Medical care for mentioned earlier patients was provided within the framework of the guaranteed benefits package approved by decree # 70, 135 and 1348 of the Government of the RK. 81.7% of respondents in 2000 and 36.4% in 2005 answered positively to question “Have you paid personally or have given presents for the rendered hospital care”.

However, 82% of respondents in 2000 and 36% in 2005 were forced to covered medical care expenses from individual pocket. The character of informal charges has been changed based on decrease of charges prevalence (Table 1).

Table 1. Comparative characteristics of informal payments in 2000 and 2005

Indicator	2000	2005
Time of payment (before, after, during treatment, in different periods of treatment)	In different periods of treatment (40,6%) and during treatment (40,1%)	Before treatment (80%)
How many times you need to pay	Twice (32,3%), once(26,4%), Three times (21,8%)	Once (91%)
Paid to:		
Doctor	15,5%	88,4%
Nurse	1,4%	1,1%
Hospital attendant	0,2%	0%
Officially to cash desk	0,8%	0,6%
Combination of mentioned earlier	19,5%	5,5%
For drugs	61,2%	4,4%
Don't know	1,5%	0
Percent of people aware of guaranteed benefits package	62%	87%

Analysis of presented data speaks about domination of payment before medical care (80% of paid), in spite of increased awareness of respondents about rights for guaranteed by state benefits package.

Comparative analysis has shown increased exactingness of patients towards quality of medical care (table 2).

Table 2 – Respondents evaluation of the quality of medical care in 2000 and 2005.

Kinds of answer	2000	2005
Very good	13,1	0,8
Good	56,9	65,4
Satisfactory	22,3	30,6
Poor	6,2	2,6
Very poor	1,5	0,6

Based on survey results there are no doubts in professional performance of medical staff obligations, in spite of presence of particular problems in state health care system.

In both surveys forced charges took place, as in the first case due to significant deficit of drugs provision of medical organizations, and in the second case due to remain problem of low salary of medical staff, as well as patients' desire to receive much more qualified medical care.

Factor analysis with  $\chi^2$  criteria was used to identify reasons that motivated respondents for informal charges. In 2000 the 1 place was given to respondent's income, second to age, third to category of diseases complexity, fourth – belonging to privileged category, fifth – awareness of guaranteed benefits package. The relation of medical service charges with respondent's level of education is proven with probability of 99%.

In 2005 the first place among case of informal charges was given to category of disease complexity, second to labour employment of patient, third to surgical operation realization, fourth to belonging to privileged category, fifth to medical services' quality assessment.

Thus, the study conducted helped to reveal positive tendency of shadow health sector reduction with several contributing factors, such as increase in budget health financing, including guaranteed benefits package, as well as patients perception of their constitutional rights.

## SOME ASPECTS OF SPECIALIZED ORGANIZATION OF MEDICAL CARE FOR PATIENTS WITH DIABETES MELLITUS

R.A. Kasymalieva

Diabetes Mellitus is one of the most prevalent diseases of human kind. In 1994 there were 110 million of diabetic patients, in 2000 total number of patients was about 140 million and in 2010 the number will increase up to 220 million. However not only wide distribution and continuous increase determine its medical and social importance but huge economical losses of the society.

The significance of hyperglycemia factor in growth of mortality prevalence and number of cases with cardiovascular diseases was shown by results of survey of 4662 people from 45-79 years observed during 3-5 years.

Maintenance of blood glucose normal figures' is crucially important while taking into consideration the place of hyperglycemia in the development of the micro and macrovascular diabetic complications.

Patients' life, duration and life quality, as well as preservation of capacity for work extensively depend on diabetic complications. In the Republic of Kazakhstan 130 thousand diabetic patients are registered. Yearly, there is a 10-12% increase of patients. There is a national program called "Diabetes".

In the central Clinical Hospital of President's affairs in 2002 there were 4010 patients, in 2003 – 3922 diabetic patients registered. The quality of treatment of diabetic patients improved dramatically in the Clinic due to economical changes that aimed to improve economical efficiency, introduce modern technologies and increase intensity of hospital's activity in 2002-2003.

In years 2002 and 2003 there were no recurring or emergency hospital admission cases with diabetes.

Table №1. Incidence and prevalence of morbidity

Morbidity (absolute number) per 100o population	2002		2003	
	prevalence	incidence	prevalence	incidence
Total of endocrine diseases	120,9	6,7	141,5	7,1
type 1 diabetes Mellitus	10 2,2	-	10 2,5	-
type 2 diabetes Mellitus	411 91,1	14 3,1	431 108,7	17 4,3

It is obvious from data presented in table 1 that morbidity prevalence increased from 120.9 in 2002 to 141.5 in 2003, although it is more than the average Republican figure. It is due to high level of observation, regular medical check-ups, predominance of older people (over 60 years – 82,3%), professional features (psychological load, stress, low activity life style).

Morbidity incidence increased in 2003 from 3,1 to 4,3, due to patients' level of observation, improved equipment of material and technical means of hospital. Morbidity with type 1 diabetes hasn't changed in 2002-2003 and is 2% from all diabetic patients; this is mainly disease of young people. Therefore, type 2 diabetes prevalence increase from 91,1 to 108.7. Diagnostics and due treatment of diabetes determine the character of clinical cause, primary and secondary prevention of complications and contribute to preservation of working capacity.

Characteristic of population health state to a great extent can be completed with data on morbidity with temporary disability.

Regular timely check-up of patients with endocrine pathology is the basis for success in treatment and prevention of complication.

It is important to mark that since 2001 some changes in diagnostic criteria have been introduced, in particular, fasting blood glucose should not be more than 5,6 mmol/l, therefore a new group of patients with malglucosemia was identified.

It is significant that the percent of patients with light clinical course of diabetes decreased. Age, duration of disease, presence and progression of complications influence on severity of clinical course of diabetes. Insulintherapy application is not a criterion for diabetes severity; several factors should be taken into consideration such as presence of complications, duration and possibility of achieving constant compensation. The increase in diabetic complications, angiopathy, neuropathy, retinopathy, nephropathy can be explained by improved diagnostics, well trained specialists working in partnership with endocrinologist.

Patients' management with diabetes mellitus is a difficult task and needs sufficient qualified doctor and active participation of patient. Individualization is a peculiarity of diabetes treatment is determined not only by blood and urine glucose level but compensation state or decompensation of metabolism, as well as presence and intensity of diabetic angiopathy and other pathologies of organs and systems.

Individual work and training in "Diabetic school" help to explain to patients the need in insulin therapy and diminish unjustified fear from "insulin dependence". Peculiarities of our patients require using high quality insulin of short and retard forms the most up-to-date sugar decreasing medications.

Thus, well organized work of out-patient clinics and hospitals is the strong potential that help to solve various problems that arise in difficult time of health reforms, as well as to save high level of medical and diagnostic process, as well as organizational and methodological activities.

**ORGANIZATIONAL ASPECTS OF THE IMPROVEMENT OF MEDICAL  
CARE OF PATIENTS WITH ACUTE STROKE BY THE IMPLEMENTATION OF THE  
STROKE REGISTER IN SOUTH KAZAKHSTAN OBLAST OF REPUBLIC OF  
KAZAKHSTAN  
Uteulin M. T.**

Vascular cerebral diseases are important medical and social problem. The mortality from acute stroke yields only to the mortality from heart diseases and tumors of all localizations and reaches in economically developed countries 11-12%(Bonita R. et al. 1994).

The steady growth of the number of vascular diseases of brain is continuing, and their rate doubles approximately every 10 years. Every year more than 20 millions of individuals suffer from stroke and in Russia – more than 450000 individuals. Every 1,5 minutes one Russian suffers from the stroke for the first time. Only in Moscow during one month more than 2000 persons are hospitalized due to stroke, which is approximately twice more than the number of individuals with the myocardial infarction. In the world annually about 5 millions of individuals die from the stroke, from which about 25% during the first month, 40% during the first year. In Russia stroke take s a second position (21,4%) in the structure of total mortality of population yielding only to CHD (25,7%). Mortality rate from the vascular cerebral diseases (VCD) in Russia according to the official statistics is one of the highest in the world. Stroke is a leading cause of the grave incapacitation of population able to work, at the same time only 20% survived

from the stroke can return to the previous job. According to WHO data the aggregate cost of direct and indirect expenditures on one patient with the stroke makes up 55000-73000 US dollars.

Health state of population of the Republic of Kazakhstan is characterized by the general impairment, there are high general morbidity, continuing growth of cardio-vascular diseases (CVD), average life expectancy is decreasing. During last decade a steady growth of morbidity and mortality of adult population of Sith-Kazakhstan Oblast (SKO) from CVD is registered, together with VCDs they amount for one third of the whole annual incapacitation of the population able to work. Within the structure of out of hospital mortality the biggest specific weight has mortality from the diseases of the cardiovascular organs and acute stroke – 82,3% cases. Morbidity and mortality rates of population of SKO from stroke three times exceed the same rates in Russia and more than 8,5 times exceed the similar indicators in Great Britain and Scandinavian countries. Morbidity and mortality rates from the VCD during 2003-2004 have unfavourable tendency both in the level and dynamics.

Changing of current situation is possible only by the creation of the adequate system of medical care. At the same time scientifically substantiated planning and organization of the acting system of the treatment and rehabilitation of stroke patients is impossible without precise epidemiological data, analysis of risk factors that have an impact on appearance and course of the disease in the population of certain countries and regions with the account of their geographical and ethnical characteristics. However, till the present time a reliable statistics on stroke morbidity and mortality is absent in SKO, therefore, for the purpose of estimation of the situation in the region and the efficiency of the work on prevention of acute stroke an organization of special strokes register is necessary. The register will allow to get reliable data about medical and social and economical consequences of stroke, the state's system of care of patients in that region, the true need in the rehabilitation measures, to reveal leading risk factors in different regions and to work out the ways of their correction. According to data of analytical research conducted by WHO, the problem of VCD and stroke is extreme in its significance medical and social problem, whose impact on lives and level of health of the population will increase consistently. Certainly, the solution of the problem is possible only under realization of the state anti-stroke program. A main goal is to unite the efforts of specialists of different profiles for the solving of main components of the problem:

- Creation of the strokes register and receiving of the reliable epidemiological data on the whole territory of SKO
- On the basis of the analysis of data from the register implementation of the system of primary and secondary prevention of the stroke
- Perfection of the system of the qualified medical care to the stroke patients on all stages of the disease including rehabilitation measures.

According to WHO the register method is the basis of the organization of treatment and medical and social rehabilitation of stroke patients and of the disease prevention.

Organization of the innovative technologies –scientific substantiation and working out of the methodology of the implementation of the stroke register in SKO for the improvement of the monitoring system and the perfection of medical care of the population will lead to the quality improvement of care of the CVD and acute stroke patients and to the undertaking of managerial decisions. While implementing the Register of stroke based on demographic indicators and territorial principle besides the receiving reliable epidemiological data the following tasks are being set:

- Assessment of medical and social and economical consequences of the stroke
- determination of the state of the system of medical care of patients in this region
- calculation of need in treatment and rehabilitation measures
- revealing of leading risk factors in various regions and working out the ways of their correction

# **GENERAL CHARACTERISTIC OF MEDICAL CONSEQUENCES OF THE ECOLOGICAL DISASTER IN ARAL SEA REGION.**

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Ecological problem is one of the most significant and difficult problems inherited by the Republic of Kazakhstan from the moment of Soviet Union's collapse. They were created predominantly due to the geographic position of Kazakhstan. On the one hand the presence of sparsely populated space that was used for the trials of the rocket and space techniques and nuclear weapon, on the other hand irrational usage of the basins of rivers nourishing Aral sea.

Unfortunately the ecological disasters consequences in the Aral sea regions did not attract rapt attention of healthcare managers, psychiatrists and psychologists. The consequences of the ecological disaster in Aral sea region are studied insufficiently.

For the purpose of determination the most significant medical and psychological and social and cultural factors affecting the psychic health of the Aral sea region's population, for the scientific substantiation and working out the systematic approach to the organization of the measures on psychological and psychiatric treatment, prevention and rehabilitation in the regions with various degree of the impact of ecological pathogenic factors the present research was undertaken, for the comparative study of the clinical characteristics of the psychic and behavioral disorders among the population groups under research, as well as the study of the possible links between them and social demographic, social and cultural and social psychological characteristics of the examined contingent of patients. Towards this end 252 residents of the zone of the ecological disaster (Aral sea region) and 252 residents of the zone of the elevated ecological risk (Kyzyl-Orda and adjacent territories) were thoroughly examined by the social-demographical, clinical-psychopathological and

From the data of preliminary research it can be seen that in Aral zone the obvious domination of affective disorders (predominantly, depression) was registered. Namely, 73,8 cases per 1000 of population – depressive disorders of personality and 55,4 cases per 1000 – within the frames of other psychic and behavioral disorders, also generalized anxiety disorders (67,7 cases per 1000 population)

Prevalence of depressive disorders of personality in Aral zone almost three times, prevalence of anxiety disorders – more than 2,5 times and proper depressive disorders - more than twice exceeded such in Kyzyl-Orda zone.

## **QUALITY OF LIFE COMPARATIVE CHARACTERISTICS WITH MYOPIA CORRECTED BY SPECTACLE AND CONTACT LENSES**

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Quality of life is the integral characteristics of comprehensive patient's performance. This criterion reflects the true state of patient's health. Quality of life study of people with low

vision has the great medical and social importance. At the same time, insufficient data is available for quality of life study of people with contact corrective vision.

In our work for comparative characteristics of quality of life with myopia corrected by spectacle and contact lenses we used modified version of SF-36 questionnaire that included 25 points for physical, social, emotional functioning assessment, as well as subjective assessment of patient's health state with myopia of various severity degree using spectacles. 23 points with similar content were included for patients with contact lenses.

The total sample consist of 330 patients, among them 191 myopia patients with corrected spectacle lenses from 14 to 62 years, divided into 3 groups on myopia degree (60 patients with weak degree, 83 with mild and 48 with strong degree), as well as 139 patients of the same age with myopia corrected by contact lenses (46 with weak degree, 56 with mild and 37 with strong degree of myopia). Both samples were representative by age and sex. Average age of patients was 28.2 years.

There is an inverse relation between the value of computing figures and quality of life, in other words for total figure the greatest number of points was evidence of worst quality of life. Quality of life for all 3 degrees of myopia significantly improves with contact lenses in compare with using spectacles. Comparison of quality of life indicators on various kinds of functioning (emotional, physical and social), as well as subjective evaluation of human state proves the fact mentioned above.

As to our opinion, smaller differences on physical and social functioning scales in compare with quality of life indices of people with myopia, corrected by spectacles and contact lenses are evidences of small importance of physical and social disadaptation rather than emotional status and subjective self-appraisal of patient for various kinds of visual correction.

3 groups of reasons (factors) were identified according to differences in quality of life for various kinds of correction (with spectacles and contact lenses):

- Reasons that bring vast differences in life quality of patients with spectacles or contact lenses (e.g. difficulties in communication visiting public places, performances, inconvenience because of appearance changes, difficulties using public and private transport)
- Reasons that have 6.5 ratio of life quality in comparison of spectacle and contact methods of correction (sense of fear, discomfort with absence of eye-glasses (contact lenses) in a certain moment or their loss; discomfort wearing spectacles or contact lenses, wrong adjustment of lenses, eye trauma, difficulties reading literature, working with computer, etc.)
- Reasons, whose influence difference on life quality of patients with spectacle and contact correction depend of myopia degree is around 10 (e.g. sense of diffidence in routine life situations, problems because of pregnancy and delivery among women, limitation of visual fields, etc.)

Thus, life quality research is in principal a new method with basic concept of patient's position as the Personality, who is the object of main public attention in all steps of medical care. Therefore, there are a lot of good arguments to believe that such studies will be successfully developed in future.

## **SOCIALLY ORIENTED PRIMARY HEALTH CARE**

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An original focal point towards which all diversity of problems of strategy of healthcare reforming in Kazakhstan society is concentrated is a problem of perfection of the activity of primary healthcare system in terms of finding out its optimal and efficient forms. The importance of the problem is determined by the fact that finding the optimal and efficient forms of providing medical and social care warrants the qualitative realization of the policy of health improvement of the nation.

Kazakhstan goes in the course of international priorities in the field of reforming and development of healthcare system. It is noted in the State Program on reforming and development of healthcare for the years 2005-2010 that the effectiveness and quality of the whole healthcare system, preservation of the labour force as well as solving of the majority of medical and social problems appearing at the families' level and among socially unprotected groups of population - children, invalid and elderly people - depends on the state of PHC. [1]. For the radical improvement of medical care of population it is necessary to create a fundamentally new model of PHC with the consideration of global and domestic experience. This will provide the turn of the healthcare system towards the population's needs by the stimulation of the mutual responsibility of doctor and an individual in the field of health protection, to improve the main indicators of population's health and significantly change the activity of tightly linked with them services of emergency and hospital care. [1]

This approach is normative substantiation of socially oriented model of primary healthcare which is one of the most perspective organizational forms of PHC:

In medical practice of Kazakhstan society the first initiatives on creation of organizations of medical and social character appeared. This event evidences about the fact that appearance of complex organizational forms of providing of medical and social care is required in the society both by the population and by medical community. Thus among the reasons of the appearance of the services of complex medical and social care in Kazakhstan the following can be chosen: objective social and economical need for solving the interrelated tasks of medical and social character on the qualitatively new level due to intensification of social problems, international policy in the field of healthcare, concept and model of healthcare accepted in Kazakhstan society, priorities and policy of the State in the field of healthcare including the priorities and policy in the sphere of primary level of healthcare, initiative of medical collectives, medical community and certain representatives from the physicians media, healthcare managers etc.

Subjects of medical and social work are individuals with the disorders of psychosomatic health and functional deviations, individuals suffered psychophysical abuse, single mothers, individuals with work injuries, young people-migrants, students, including adolescents and children, individuals with deviant behaviour.

As tasks of activity of medical and social service the following are marked: medical and hygienic teaching of the population, treatment and sanitary work, creation of conditions for the social adaptation, self realization of individuals with limited possibilities and deviant behavior, creation of conditions for the medical psychological care. Main types of activity performed in the medical and social service are consulting, preventive, psycho-correction, educational, diagnostic. Strategic task of medical and social work is preservation and improvement of quality of life of patients.

## **MEDICAL-SOCIAL PROBLEMS OF ADOLESCENTS AND YOUTH IN MODERN CONDITIONS.**

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Currently the health problems of the adolescents and youth are emerging worldwide.

So, among the important medical problems related to the given age group are the problems of reproductive health. Adolescent girls becoming pregnant before achievement of full physical and hormonal development are at higher risk of the development of complications during the delivery, especially if they have anemia or impediments in growth. By WHO estimation, for the adolescent girls the level of risk of mortality from the reasons related to pregnancy is 20-200% higher than for adult women.

The state of health of the adolescent and youth is greatly influenced by the social-economic factors.

From the point of poverty, in Kazakhstan the most vulnerable groups are children, especially in families with many children, which are consisting one third of the poor population of the republic. The percentage of the registered unemployed in the age of 15-24 years from the total number of unemployed persons in average in one year in 2002 made up 30.8%. In total the tendency to the decrease of the given index is observed.

The analysis of the food consumption by the poor population according to the data of 2002 showed that the so called “carbohydrate model of nutrition” is prevalent among the needy population.

In Kazakhstan mortality by natural reasons in the age group 15-19 years since 1989 till 2002 has increased from 39.8 cases per 100 000 population of the corresponding population group till 41.1 cases. Mortality from accidents and injuries, including suicides, in the age group 15-19 years per 100 000 population in the corresponding age group increased from 69.0 in 1989 to 80.0 cases in 2000 and 69.7 in 2002.

The potential danger for the health of the adolescents and youth are carried in tobacco, alcohol and other psychoactive substances, which became accessible for the adolescents. Many factors that underlie the appearance of bad habits among the adolescents are explained by the social reasons. These are poverty, unemployment, discrimination on various reasons, negative social changes. The following particular feature of the adolescents and youth should be mentioned also: often they don't search for a qualified medical care but rather use the services of uncertain paramedics or not treated at all, that have severe consequences. The health problems of the adolescents and youth are also connected with the low level or absence of medical literacy of the given groups of the population. Such situation is explained by the decrease of the quality of teaching activities of the educational institutions, low level of hygiene-informational and preventive activities of the medical organizations, etc.

In general, health of the adolescents and youth as a part of a public health is a complicated issue, which requires complex approach in solving its problems. The care about the health of the adolescents and youth should be included into the number of the most important tasks of the country. Solving these problems the government will ensure the further economic, social and political progress and stability. It related mostly to the fact that adolescents and youth are the part and potential basis of forming human capital of the country. Health, energy and activity of these population groups will determine the future of the nation.

## **YOUTH-FRIENDLY CLINIC AS A PROMISING FORM OF RENDERING MEDICAL-SOCIAL CARE FOR ADOLESCENT AND YOUTH.**

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The world practice of rendering medical services for adolescents and young created such forms as youth-friendly clinics (YFC).

Youth-friendly clinic – is an institution, providing complex medical-psychologic-social care on problems of health maintenance conditional to the peculiarities of the adolescent age, based on the principles of voluntarism, accessibility and goodwill.

The necessity in clinics oriented on needs of the young people and adolescents is dictated by the specific reasons. For the youth there is a need in such forms of services that are different from ones provided for adults. Adolescent and youth often don't consider themselves ill, therefore special youth clinics should be oriented on not only for the problems most typical for ordinary policlinics but also on the other aspects of health; consequences of the negative events took place in the childhood; sexual behavior and reproductive health; alcohol and drug consumption, smoking, poor nutrition, depression, high risk of suicide, accidents and injuries. .

In 2004 there was taken a decision to create a youth friendly clinic under the Model family-medical ambulance “Demeu”. The need to create such clinic in Astana was explained by the following main reasons:

1. Worsening of health indices of adolescents and youth;
2. Insufficiency of the basic medical care for adolescents;
3. Increase of social diseases among adolescents and youth, social meaning of their health.

The activities of the youth-friendly clinic under the MFMA “Demeu” include: social-psychological training on problems of correction of the behavior of the persons with deviant forms of behavior, limited abilities; confidence phones for consulting and medical-correction activities, training on healthy lifestyles, safe sex and family planning, prevention of HIV/AIDS, drug addiction; free medical examination and consulting of the socially vulnerable youth; conduction of the urban, republican charity social actions; issue of informational brochures and materials for the population on the problems of healthy lifestyles; conduction of surveys; training of the leaders among the youth, trainers on healthy lifestyle, volunteers; participation in international and republican training workshops; round tables, conferences; conclusion of the agreement with the institutions, colleges and high schools of Astana about collaboration in prevention of drug addiction and HIV/AIDS among youth; collaboration with governmental bodies, nongovernmental and international and medical organizations.

Youth-friendly clinics present the adequate form of rendering assistance for adolescents and young people in solving health problems. The given model provides for adolescents and young integrated medical-social-psychological care, which could be considered as ideal; as it was build taking into account the particularities of the given age group.