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БИОЛОГИЯ ЖӘНЕ МЕДИЦИНА СЕРИЯСЫ

◆

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ASSESSMENT OF THE QUALITY AND SOCIAL EFFICIENCY OF HOSPITAL REPLACING MEDICAL CARE (HRC) IN KAZAKHSTAN

Abstract. This work provides and shows the patients' satisfaction level with the quality of hospital-replacement medical care and the components of the quality factor of hospital-replacement medical care influencing on the level satisfaction.

Key words: hospital-replacing medical care (HRC), day hospital (DH), hospitalization replacement technologies (HRT), social efficiency, medical care.

Introduction. Hospital-replacement technologies provide efficient use of hospital beds, the reduction of the level of unnecessary hospitalization, and besides, they help save the resources [1-4].

Since the establishment of market relations in healthcare, the issue of the quality of medical care is becoming increasingly relevant. Any medical service can find its market segment only if it is carried out at a quite high level [5-8].

One of the objectives is to assess social efficiency of delivered hospital-replacing medical care according to patients.

It was necessary to determine which factors have the greatest influence on it.

Materials and methods of investigation. A cross-sectional, full-design study was performed in day hospitals (DH) in Almaty. Total number of respondents, who participated in questionnaire - 1670.

According to the stated goals and tasks we carried out the sampling of medical organizations according to the criteria of inclusion and exclusion from the study.

Inclusion criteria – day hospital patients, receiving outpatient aftercare.

Estimation process. Information about the data sources estimation methods computational tools and statistical analysis used in derivation of our estimates are provided in our other publications.

The results of research and discussion. Analysis of hospital-replacing medical care availability and satisfaction with result of utilization and delivered care in day hospital ($p < 0.0001$) shows that $92.8 \pm 1.2\%$ patients consider medical care to be available, $53.3 \pm 1.2\%$ of them expressed satisfaction and $39.5 \pm 1.2\%$ - dissatisfaction with results of rendered medical care.

Linear model of patients' satisfaction with the quality explains the statistical significance of coefficients of determination: 22% of the variation - satisfaction with results of medical care in day hospital and 21.2% of the variation - satisfaction with results of service in the clinic by place of residence ($R^2 = 0.0212$), are statistically significant.

Patients' satisfaction with hospital-replacing medical care quality is related to expenses for medicines during day hospital treatment.

Waiting time of planned hospitalization in day hospital ($R^2 = 0.030$) had no significant effect on patient satisfaction.

Linear regression analysis

Predictors (X) (M, SD)	$b=$	$a=$	$R^2=$	$F_{obs}=$	$R^2, \%$	$95\%CI$
Expenditures for medicine during the treatment in day hospital M=1.46 SD=0.49	0.75	0.47	0.220	85.160	22.0	1.44-1.49
Satisfaction with the organization of medical care in a polyclinic M=1.87 SD=1.06	1.03	0.21	0.212	78.199	21.2	1.82-1.92
Satisfaction with the quality of the medical care in the polyclinic M=2.28 SD=0.70	0.80	0.28	0.154	40.707	15.4	2.25-2.32
Satisfaction with the level of availability of laboratory studies M=1.90 SD=0.88	1.02	0.22	0.152	39.225	15.2	1.86-1.94
Satisfaction with the skill level of employees M=2.35 SD=0.79	0.90	0.23	0.130	28.740	13.0	2.32-2.39
The reasons for not going to a polyclinic M=4.01 SD=1.48	1.90	-0.12	0.121	24.883	12.1	3.94-4.08
Satisfaction with conditions in the day Hospital M=2.27 SD=0.58	0.77	0.29	0.118	23.665	11.8	2.24-2.30

However, conditions of stay in day hospital was correlated with patients' satisfaction ($p<0.0001$). Refusal of necessary examinations and treatment was statistically significantly greater than availability of diagnostic rooms.

And availability of diagnostic rooms is interconnected with patients' satisfaction with hospital-replacing medical care quality ($p<0.0001$).

Improvement of hospital-replacing medical care quality in polyclinic had a significant influence on respondents' satisfaction with hospital-replacing medical care quality ($p<0.0001$).

Other factors were less important on their regularity: self-assessment of health ($F_{kp}=2.98$); planned hospitalization waiting time ($F_{kp} = 1.49$).

Respondents' satisfaction with hospital-replacing medical care quality is mostly connected with the performance of the treatment itself, and is less connected with satisfaction with constituent factors of the process of treatment.

Respondents' opinion on the quality of hospital-replacing medical care is not shifted under the influence of socio-demographic factors.

Conclusions. The expediency of conducting regular monitoring of the evaluation of patient satisfaction with hospital-replacing care was demonstrated. Its results allowed to evaluate the quality of medical care in day hospitals.

Continuous monitoring of the day hospitals' performance and system of the analysis of effectiveness of using hospital-replacing technologies create a breeding ground for the growth of competitiveness of the healthcare organizations rendering hospital-replacing care.

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REFERENCES

- [1] Akanov A., Kurakbaev K.K. Health Organisation in Kazakhstan Astana-Almaty, **2006**. 232 p. (in Russ.).
- [2] Akanov A.A., Devjatko V.N., Ahmetov U.I., Bajserkin B.S., Tulebaev K.A. The Hospital case in Kazakhstan: status, problems and approaches to the new model. Almaty, **2006**. 168 p. (in Russ.).
- [3] Order by the Minister of Health of the Republic of Kazakhstan dated November 26, **2009** № 798 "On approval of rendering inpatient care", registered in the Register of state registration of normative legal acts of the number 5951 (in Russ.).

- [4] Ozhikenova A., Kurakbayev K. Economic efficiency of hospital-replacing technologies // European Journal of Public Health, October **2015**, Vol. 25, Issue suppl_3, 1 ckv176.108, (in Eng.). <https://doi.org/10.1093/eurpub/ckv176.108>
- [5] Hone T., Gurol-Urganci I., Millett C., Başara B., Akdağ R., Atun R. Strengthening Primary Care: The Introduction of Family Medicine in Turkey 2005–2013 Eur J Public Health (**2015**) 25 (suppl 3): ckv170.104 (in Eng.).
- [6] Ozhikenova A.K., Kurakbayev K.K., Ozhikenov K.A. Hospital-replacing technologies as an effective medical treatment from // European Journal of Public Health. 1 November **2016**, Vol. 26, Issue suppl_1, ckw175.158, (in Eng.). <https://doi.org/10.1093/eurpub/ckw175.158>
- [7] Ozhikenova A.K., Kurakbayev K.K., Ozhikenov K.A. Evaluation of economic efficiency and organization of medical aid to rural population in Kazakhstan: Aiman Ozhikenova // European Journal of Public Health. 1 November **2016**, Vol. 26, Issue suppl_1, ckw174.013, (in Eng.). <https://doi.org/10.1093/eurpub/ckw174.013>
- [8] Laxminarayan R., Mills A., Breman J., Measham A., Alleyne G., Claeson M., et al., et al. Public health advancement of global health: key messages from the Disease Control Priorities Project. Lancet **2006**; 367: 1193-208. (in Eng.).
- [9] Schäfer W., Kroneman M., Boerma W., van den Berg M., Westert G., Devillé W., van Ginneken E. The Netherlands: Health system review. Health Systems in Transition, **2010**; 12(1):1–229. (in Eng.).
- [10] Jacobs P., Rapoport J. The Economics of Health and Medical Care. Sudbury, Massachusetts: Jones and Bartlett Publishers, **2004**. 438 p.(in Eng.).

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ҚАЗАҚСТАНДАҒЫ СТАЦИОНАРДЫ АЛМАСТЫРАТЫН МЕДИЦИНАЛЫҚ КӨМЕКТІҢ САПАСЫН ЖӘНЕ ӘЛЕУМЕТТІК ТИІМДІЛІГІН БАҒАЛАУ

Аннотация. Мақалада стационарды алмастыратын медициналық көмек көрсетудің сапасына пациенттердің қанағаттануларына бағалау жүргізілді және қанағаттануларына әсер ететін аурухана алмастыратын медициналық көмек көрсетудің сапасын құраушы факторлары анықталды.

Түйін сөздер: стационарды алмастыратын медициналық көмек, күндізгі стационар, стационарды алмастыратын технологиялар, әлеуметтік тиімділік, медициналық көмек.

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ОЦЕНКА КАЧЕСТВА И СОЦИАЛЬНОЙ ЭФФЕКТИВНОСТИ СТАЦИОНАРОЗАМЕЩАЮЩЕЙ МЕДИЦИНСКОЙ ПОМОЩИ (СЗП) В КАЗАХСТАНЕ

Аннотация. В работе проведена оценка удовлетворенности пациентов качеством стационароздамещающей медицинской помощи и установлены составляющие факторы качества стационароздамещающей медицинской помощи, влияющие на удовлетворенность ею.

Ключевые слова: стационароздамещающая медицинская помощь (СЗП), дневной стационар, стационароздамещающие технологии (СЗТ), социальная эффективность, медицинская помощь.

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