Фармакоэкономика *теория и практика*

Pharmacoeconomics *theory and practice*

- ❑ МЕТОДОЛОГИЧЕСКИЕ АСПЕКТЫ ПРОВЕДЕНИЯ ФАРМАКОЭКОНОМИЧЕСКОГО ИССЛЕДОВАНИЯ ТЕРАПИИ СПАСТИЧЕСКИХ ФОРМ ДЕТСКОГО ЦЕРЕБРАЛЬНОГО ПАРАЛИЧА

- ❑ МОДЕЛИРОВАНИЕ ВЫЖИВАЕМОСТИ В ФАРМАКОЭКОНОМИЧЕСКИХ ИССЛЕДОВАНИЯХ: МОДЕЛЬ МАРКОВА И МОДЕЛЬ РАЗДЕЛЁННОЙ ВЫЖИВАЕМОСТИ

- ❑ РЕЗУЛЬТАТЫ РОССИЙСКИХ ФАРМАКОЭКОНОМИЧЕСКИХ ИССЛЕДОВАНИЙ

PHARMACOECONOMIC EVALUATION OF INFUSION-DETOXIFICATION THERAPYFOR POISONING WITH PSYCHOACTIVE SUBSTANCES IN NARCOLOGICAL HOSPITALS OF THE REPUBLIC OF TATARSTAN

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Summary: twelve traditional therapeutic schemes of infusion-detoxification therapy of budget narcological hospitals of the Republic of Tatarstan and also an innovative scheme with greater efficiency were evaluated and compared from the viewpoint of pharmacoeconomics in this research. Analysis of effectiveness showed that innovation scheme, one bed in resuscitation of narcological hospital can serve the needs of 93 patients per year, i.e. bedspace will be in use more intensively. During treatment according to traditional schemes the indicator of the "function hospital bed" was equal to 56 and 70 patients a year. The analysis of the cost showed that the maximum annual budget of traditional therapy is represented on the scheme №3 (1 050 560 RUB), and the minimum one is on the scheme №9 (893 200 RUB). The budget of innovative scheme was 1 452 906 RUB. The innovative scheme of infusion-detoxification therapy according to the analysis was more effective, but the therapy was more expensive. During the research of the cost of the structure with innovative treatment scheme it was found out that the greatest part of the cost (38%) is the cost of pharmacotherapy. The analysis of "cost minimization" allowed choosing among the traditional schemes of infusion-detoxification therapy the most optimal variant. According to "budget impact" analysis the transfer of 50% of patients to the innovative therapies, would require a budget increase to 2,2%, and for transfering 100% of patients on the new scheme of the IDT the budget increase must be 6% relative to 100% applications of traditional schemes in regional narcological hospital.

Key words: pharmacoeconomics, infusion-detoxification therapy, poisoning with psychoactive substances, cost, effectiveness, "cost-effectiveness" analysis, "cost minimization" analysis, "budget impact" analysis.

Introduction

Narcological diseases pose a serious threat throughout the entire world in connection with the epidemic nature of their distribution [14, 16].

A lot of new drugs appear in the market of psychoactive substances (PAS) nowadays. In 2015 in the United Nations Office of Drugs and Crime became aware of 75 new substances, while in 2014 there were only 66 [10].

The use of psychoactive substance is accompanied by severe intoxication, toxic-dismetabolic load on the entire body, necessitating infusion-detoxification therapy (IDT) [4, 17].

It is known that preventing complications, leading to disability and mortality can help the improvement of the quality of intensive therapy and availability of beds in intensive care [2].

Currently, the monitoring and quality control of medical services in the resuscitation and intensive care unit (ICU) is evaluated using the indicator of "efficiency of use of bed fund," which reflects medical and economic components of work in the hospital department. One of the indicators reflecting the intensity of activities of ICU is "a function of hospital bed" [7, 11].

Materials and methods

The assessment was undertaken through a search of the problem approaches to treatment of narcological in the databases PubMed, Medlink, Cochrane, scientific electronic library elibrary.ru.

ICU of narcological hospital is a high-priced institution and it is important to provide rational use of intensive care beds. The efficiency of bed usage in

ICU DRIT is characterized by the function hospital bed (FHB) along with other indicators. The literature analysis has shown that questions of the intensive use of beds of ICU in narcological hospitals were not yet been examined by otherauthors. what underlines the relevance of making pharmacoeconomic analysis (PEA).

Emergency help for narcological patients in the ICU is provided according to five standards of medical care approved by the Orders of RF Ministry of healthdated 04.09.2012, № 125n, 126n, 129n, 131n, 135n.

Examples from clinical practice of narcological hospitals demonstrate that the outcome of therapy and the size of the therapy cost are determined by timely hospitalization of the patient in the ICU in case of poisoning with PAS [4].

To select the economically optimal scheme for IDT it is necessary to identify all the alternative technologies and to perform their qualitative and quantitative analysis. Also, it is necessary to determine the choice of the budget that will be used.

The diversity of the poisonings with PAS is the reason for the absence of general recommendations for the IDT, what became the basis for expert opinion usage. A research for therapeutically effective schemes of IDT in case of poisoning with PAS 52 psychiatrist-narcologists from 4 narcological dispensary, five narcological departments in local hospitals and seven medical organizations of non-state form of ownership were interviewed.

The IDT composition was selected as an innovative scheme: potassium chloride+sodium acetate+sodium chloride (acesol) solution 400,0x1, dextrose (glucose) solution 5%-200,0x2, hydroxyethyl starch (Infukoll HES) solution of 6%-500,0x4, sodium thiosulfate solution 30%-10,0x1, pyridoxine solution 5%-1,0x2, thiamine solution 5%-1,0x2, bromdihydrochlorphenylbenzodiazepine (phenazepam) solution 0,1%-1,0x2, ethylmethylhydroxypyridine succinate (Mexidol) solution 5%-2,0x2 (in the scheme №1).

Unlike traditional schemes the innovation scheme contains the solutions of hydroxyethyl starch (Infukoll HES) and ethylmethylhydroxypyridine succinate (Mexidol), which significantly increases the effectiveness of IDT. The severity of the patient clinical condition the ICU was evaluated with a scale APACHE II. According to the patients' data, the innovative scheme qualitatively decreased the risk of death and severity of their condition (n=46).

The required data was collected in GAUZ "Republican narcological dispensary of the Ministry of healthcare of the Republic of Tatarstan" (RND MH of RT, Kazan) its branches in the cities of Almetyevsk, Naberezhnye Chelny, Nizhnekamsk, mental hospitals in Bugulma and Zelenodolsk by copying the medication administration record of narcological patients (n=650), treated from January 2011 to January 2016 in the ICU, and did not include interference in therapy.

In the standardization research, the authors have made the criteria for inclusion of therapeutic technologies in this PEA: middle age patients with ; a severe poisoning of PAS; the absence of side chronic diseases. The IDT schemas according to the results of a literature research and survey was safe, healthy, did not have side effects and and provided essentially similar clinical efficacy (elimination of life-threatening conditions), but the management of narcological hospitals assumed the different impact on the bed performance criteria of ICU.

After information search, we selected 12 different therapeutic schemes IDT (schemes №2-13), which are the most common in drug abuse treatment in the hospitals of the Republic of Tatarstan (table 1). Schemes №2-13 were considered in this PEA as traditional methods of IDT.

Analysis of the data presented in table no. 1 showed that the schemes of the IDT are composed of a different number of drugs (from 6 to 11), represented by six groups of the ATC classification (A, B, C, N, R, V), all drugs are included in the list of vitally important and most essential medicines (VIMEM) from 01.03.2016 [9].

Initially, the authors defined the objectives of this PEA:

1. The analysis of efficiency   of innovative scheme of IDT in case the poisoning of psycho-active substances in comparison with the traditionally used schemes in hospitals of RT from the point of view of work optimizationof ICU using the values of FHB.

2. Cost analysis for determination of the costs of hospital for one intensive carebed per year, with selected therapeutic technologies.

3. Determination of the scheme with the minimal cost of therapy (analysis of cost minimization), among the schemes of IDT with the same efficiency to.

4. Determination of the economic character of IDT use by using cost-effectiveness analysis (CEA) for the innovative scheme and for communicating costs andeffectiveness, expressed with the increase of the FHB indicator.

5. Performing a simulation of the budget, including transfers of ICU patients of the narcological hospital for innovative therapy scheme. And also to taking into account the cost-savings that can be achieved with the transfer   to cheaper traditional methods ("budget impact " analysis).

Analysis of the effectiveness

The quality of medical care and the amount of patient care is directly dependent on the ability to service one's hospital bed or on the number of patients, i.e. FHB. The increase of this indicator of work of the hospital economically reduces the unproductive spendings of the hospital and reduces the cost of therapy, as the cost of an empty bed is 3/4 of a occupied bed´s cost. The FHB index is usually calculated by dividing   the average hospital bed occupancy rate (D) to the average lenght of stay of patient in the hospital (P) [6].

In this analysis the average lenght of stay of the patient in the hospital (P) was calculated by dividing the sum of patient days (K) of all patients treated using a specific scheme of IDT to the number of patients (N): P = K/ N.

Therefore the FHB was calculated using the formula: FHB = D · N /K.

The average hospital bed occupancy rate (D) ICU which norm is 280 days pertains to specific organizational requirements such as a feature of the resuscitation   aseptic technics and conservation reserve beds for immediate hospitalization [13].

The results of the efficiency analysis are presented in table 2.

The selected criterion of efficiency - indicator of the FHB will be higher when smaller the duration of treatment of the patient ICU. Patients in the analyzed cohorts were transferred from the ICU to the in-patient department when the value of severity degree was less than 5 scores on a scale APACHE II.

Analysis of effectiveness showed that the application of innovative schemes lets one resuscitation bed of narcological hospital serve the needs of 93 patients per year, i.e. bedspace will be used most intensively. When therapy schemes №2, 6 and 12 FHB index equal to the minimum and 56 (37 patients less per year). The schemes №3-5, 7-11 and 13 will allow to treat 70 patients per year using one intensive care bed.

Cost analysis

The next step of the PEA included the calculation of the annual budget for each of the analyzed schemes of the IDT while the standard hospital bed occupancy rate of ICU was 280 days per year. The direct cost of one bed-day IDT, which is then multiplied by the average average hospital bed occupancy rate ICUis calculated by adding the cost of medicines, consumable medical assets (CMA) to ensure the safety of health services and calculated the cost of the remaining part of the bed-day. The maximum marginal cost prices were used for calculation of treatment cost [3]. The cost of drug therapy was calculated using the formula:

Costs = Drug dose (mg) to take x Amount of drug intakes x Cost of 1 mg of the drug

The value of IDT for the drug costsfor 1 day of treatment varied from 108 (scheme №9) to 692 rubles (scheme №3), the difference was 584 RUB. Innovative therapeutic scheme had higher costs for used drugs – 1 955 RUB, which is 1 263 RUB more expensive then drugs in scheme №3 (table 3).

The cost of CMA (syringe, infusion system, cotton swabs, disinfectant, 70% alcohol, rubber gloves) for intravenous injection amounted to 18,96 RUB; for intramuscular injection - 18,54 RUB; for intravenous drip-feed - 27,61 RUB [12].

The analysis showed that the cost of CMA for day 1 of the IDT ranged from 191 (schemes №3,4) to 399 rubles (scheme №13), the difference was 208 rubles. Scheme №1 had a lower cost of CMA - 365 RUB comparing to the standard scheme №13 (table 3).

The cost of inpatient care was calculated using the national standard of length of hospitalization and rate of the cost of a bed day based on the level of the medical institution. Basic rates cost of bed-day are given in tables 1.1., 1.1.1 of Annex 1 to the Tariff agreement for 2016 year [12].

The budget and obligatory medical insurance policy fund OMI assigned 2 686,10 rubles (the base rate) for one bed-day in hospital. The cost of a bed-day in the ICU higher on 20% that the base rate, i.e. 3 223 RUB. For drug abuse clinics of RT a coefficient level medical institutions on the average 1,11270 is introduced [5, 8].

The normative cost of a bed-day ICU includes: accommodation, meals, consultations with doctors, nurse care, medicines and CMA (20% of the bed-day cost), the daily monitoring in resuscitation, nursing care procedures [1].

The calculations showed that the cost per bed-day in the ICU of narcological hospital in RT was 3 223 · 1,11270 = 3 587 RUB. Less the cost of drugs and CMA (20%) the cost of the rest of bed-days is 2 869 RUB.

The calculation of the direct costs for each of the analyzed therapeutic technology included the price of medicines and CMA for the one day treatment (table 3) added to the value of one bed-day .

The total cost of one bed-day IDT according to traditional schemes varied from 3 752 (scheme №3) to 3 190 RUB (scheme №9), the difference was about 562 RUB. The annual budget of the IDT on each of the traditional schemes is presented in table 3.

The largest annual budget of the traditional IDT is represented by the scheme №3 (1 050 560 rubles), and the minimum on - by the scheme №9 (893 200 rubles), the difference is 157 360 RUB. Budget for innovative schemes amounted to 1 452 920 RUB, which is for 402 360 RUB more   expensive than the cost per year for the scheme №3.

The structure and percentage of the cost of IDT in case of poisoning with PAS is shown in Fig. 1. According to the calculations of this PEA, the largest part of the cost of innovative technologies (38%) is the cost of pharmacotherapy.

The calculations of the "cost analysis" can be used in a narcological hospitals for determination of rates for IDT and for calculating the full cost of the disease. Lower cost per bed-day makes the most intensive use of bed capacity of hospital, which improves the quality of medical care.

"Cost-effectiveness" analysis

Analysis "cost-effectiveness" (CEA) allows to compare the studied medical technology using average unit cost per unit of effect [15].

The "cost-effectiveness" analysis determined the total costs of treating one patient in one ICU bed with a particular therapeutic scheme. For this study the annual budget for technology was divided by the number of patients who used the one ICU bed per year (index FHB) (Fig. 2).

The results of the analysis show that the coefficient of "cost-effectiveness" (CER) for the innovative therapy is 15 567 RUB.

The cost of achieving a unit of effectiveness for the scheme №9 is the smallest (12 760 rubles), so scheme №9 is the most economically preferred of the twelve traditionally used in narcological hospitals of RT.

To optimize schemes with equalefficiency two main groups there were determined: with an index equal to 56 FHB (schemes №2, 6 and 12), and 70 (schemes №3-5, 7-11, and 13) (table 2). Then using the method of "cost minimization" there were identified schemes with a minimum cost of treatment.

Cost minimization analysis

Cost minimization analysis showed the optimal scheme №9 among the therapeutic schemes group FHB=70 person/year with the cost per one patient about 12 760 RUB. In group FHB=56 person/year the leading scheme is №12 with the cost per one patient 16 769 rubles (Fig. 2). Among them, scheme №9 is the most effective.

These results can be used by the administration of narcological hospital for the considering the feasibilityof the use of more expensive medical technology with equally effectiveness.

As a result of conducted research the innovative scheme in comparison with the traditional scheme №9 is more effective according to the chosen criterion of efficiency (FHB=93) and has a larger value of the ratio "cost-efficiency" (15 567 rubles), it is "cost-effective".

Budget Impact Analysis

The situations were modeled to determine the budget impact of the implementation of innovative therapeutic technologies of IDT in narcological hospital at the regional level:

- the budget for 100% of patients receiving IDT using the traditionally assigned schemes;

- the budget, using which a certain proportion of patients was receiving innovative therapies;

- the budget using which 100% of patients received IMT with innovation scheme (table 4).

The costs of a population model of patients of 100 people amounted to 1 468 000 rubles taking into account the distribution of patients with traditionally used schemes.

According to the budget impact analysis (BIA) (Fig. 3) simulated budget with a transfer of 50% of patients for treatment using the scheme №1 will be 1 501 000 RUB, which exceeds the budget of 100% usage of the traditional therapy up to 33 000 rubles (2,2%).

A similar transfer of 100% of patients will require a cost 1 557 000 RUB or increasing of the budget to 89 000 RUB (6,0%).

It is also interesting to develop the budget impact analysis, indicating besides the amount for the inplementation of innovation technologies, and also considering the savings to be achieved with the transfer of patients to cheaper traditional schemes №9 and 12 (table 5).

The transfer of 100 ICU patients of a narcological hospital on cheaper traditional schemes of IDT №9 and 12 will require 1 379 000 rubles, which will allow to achieve budget savings 89 000 RUB (6,1%) (Fig. 4).

According to the budget impact analysis (Fig. 4) the modelling process of budget including transfer of 50% of patients to a treatment using the innovative scheme will improve the budget of 100% usage of schemes №9 and 12 (1 379 000 RUB) 89 000 rubles (6,5%). A similar transfer of 100% of patients will require a cost of 1 557 000 RUB or increase of the budget to 178 000 RUB (12,9%).

The results of this PEA may be interesting for persons controlling and planning the healthcare budget [11].

Conclusions

1. The usage of innovative schemes of IDT in case of poisoning with PAS in comparison with the medical technologies that traditionally used in narcological hospitals of RT, increases the success rate of the ICU "function hospital bed" to 93 patients per year, in contrast to the current 56 and 70 (efficiency analysis).

2. The maximum annual budget of traditional IDT is represented by the scheme №3 (1 050 560 RUB), and the minimum is with the scheme №9 (893 200 RUB), the difference is equal to 157 360 RUB. The costs of narcological hospital for one occupied intensive care bed per year with the application of innovative technology will be 1 452 920 RUB (cost analysis). The greatest part of the cost of innovative technologies (38%) is cost of pharmacotherapy.

3. Therapy using innovative scheme is "cost-effective" because it is characterized with the highest efficiency, expressed in increasing "functions of hospital bed" along with the additional cost.

The cost of achieving a effectiveness unit is 15 567 RUB for innovative therapy schemes.

From twelve IDT schemes traditionally used in narcological hospitals of RT the most economically preferred is scheme №9, because it has the lowest cost of achieving a unit of effectiveness (12 760 rubles) ("cost-effectiveness" analysis).

4. Among therapeutic schemes with efficiency FHB=70 patients per year the optimal scheme is №9 with the cost per one patient 12 760 RUB, the leader of the scheme with FHB=56 is №12 with minimal cost 16 769 rubles the scheme №9 has a biggest efficiency (analysis of cost minimization) among them.

5. The costs amounted to 1 468 000 rubles in the simulation of the budget for a population of 100 patients per year receiving only traditional medical technologies in narcological hospitals of RT.

The budget increase to 1 501 000 rubles (2,2%) require for treatment considering transfer of 50% of the patients on the innovative therapy, and the transfer of 100% of patients to the new scheme of IDT to 1 557 000 rubles (6%) compared to 100% application of traditional schemes of regional narcological hospitals.

Modeling the budget with the transfer of 50% of patients to the treatment using the innovative scheme will improve the budget to 100% of usage of

schemes №9 and 12 (1 379 000 RUB) for 89 000 rubles (6,5%). A similar transfer of 100% of patients will require a cost in the amount of 1 557 000 RUB or increase of the budget for 178 000 RUB (12,9 %).

The model of IDT presented hereafter presents budget model in case of poisoning with PAS for a population of 100 people will allow managers of narcological hospitals to consider different ratios of the introduction of innovative schemes in practice in the ICU to optimize the work of intensive care beds (analysis of "budget impact").

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Table 1

Scheme of infusion-detoxification therapy

№	Medications for intravenous administration, dosages	Scheme of infusion-detoxification therapy												
		1	2	3	4	5	6	7	8	9	10	11	12	13
A. Medications affecting the digestive tract and metabolism														
1	Ascorbic acid solution 5%-2,0x2 times	-	+	-	-	+	+	+	+	+	+	+	+	+
2	Glycyrrhizic acid+ Phospholipids solution 2,5g-10,0 x2 times	-	+	+	+	-	-	-	-	-	-	-	-	-
3	Pyridoxine solution 5%-1,0x2 times	+	+	+	+	+	-	-	-	-	-	-	+	+
4	Riboflavin+Inosine+ Nicotinamide+Succinic acid solution10x1 times	-	-	+	-	-	-	-	-	-	+	-	-	-
5	Thiamine solution 5%-1,0x2 times	+	+	+	+	+	-	+	-	-	-	-	+	+
6	Thioctic acid concentrate solution for infusion 300 mg -10,0x2 times	-	-	-	-	-	-	-	-	-	-	-	+	+
B. Hematopoiesis and blood														
7	Amino acids for parenteral nutrition solution 500,0x1 times	-	-	-	-	-	+	-	-	-	-	-	-	-
8	Hydroxyethyl starch solution 6%-500,0x4times	+	-	-	-	-	-	-	-	-	-	-	-	-
9	Dextran 40 solution 200,0x1times	-	-	+	-	-	+	-	-	-	-	-	-	-
10	Dextrose solution 5%-200,0x1-2 times	+	+	+	-	-	-	+	+	+	+	+	-	+
11	Dextrose solution 40%-10,0x2 times	-	-	-	-	+	+	-	-	-	-	-	+	-
12	Potassium chloride solution 4%-10x1 times	-	-	-	-	-	-	+	-	-	-	-	-	+
13	Potassium chloride + sodium acetate+sodium chloride (acesol) solution 400,0x1 times	+	-	+	-	-	-	-	-	+	-	-	-	-
14	Magnesium sulfate solution 25%-5,0x 1-2times	-	+	-	-	+	-	+	-	-	-	-	+	+
15	Meglumine sodium succinate solution 1,5%-200x1-2 times	-	-	-	+	+	-	-	+	-	-	-	-	-
16	Sodium chloride solution 0,9%-400,0x1 times	-	+	-	-	+	+	-	-	-	-	-	-	-
17	Sodium chloride solution 0,9%-200,0x1-2 times	-	-	-	-	-	-	+	+	+	+	+	+	+
C. Medications for the treatment of diseases of the cardiovascular system (including diuretics)														
18	Potassium and magnesium asparaginate solution 5,0x2 times	-	+	-	-	+	-	-	-	-	-	-	-	-
N. Medications for the treatment of diseases of the nervous system														
19	Bromdihydrochlorphenylbenzodiazepine solution 0,1%-1,0x2 times	+	-	-	-	-	-	+	+	+	+	+	-	-
20	Vinpocetine solution 0,5%-2,0x2 times	-	-	-	-	-	-	-	-	-	-	+	-	-
21	Diazepam solution 0,5%-2,0x1-2 times	-	-	-	-	+	-	-	-	-	-	-	+	-
22	Piracetam solution 20%-5,0x2 times	-	-	-	-	+	+	-	+	+	-	-	-	-
23	Tramadol solution 5%-2,0x2 times	-	-	-	-	-	-	-	-	-	-	-	-	+
24	Ethylmethylhydroxypyridine succinate5%-2,0 x2 times	+	-	-	-	-	-	-	-	-	-	-	-	-
R. The respiratory system (including antihistamines)														
25	Diphenhydramine solution 1%-1,0x1-2times	-	-	-	-	-	-	+	+	+	+	+	+	+
V. Other medications (including poisoning)														
26	Sodium thiosulfate solution 30%-10,0x1times	+	+	-	+	-	+	-	-	-	-	-	-	+

Table 2

Analysis of effectiveness

№№	The number of patients, N	The amount of bed-days, K	Function hospital bed, FHB
1	46	138	93
2	53	265	56
3	55	220	70
4	29	116	70
5	69	276	70
6	56	280	56
7	66	264	70
8	67	268	70
9	68	272	70
10	50	200	70
11	52	208	70
12	58	290	56
13	27	108	70

Table 3

Cost analysis

№№	The costs of medicines, RUB/day	The costs for consumable medical assets, RUB/day	The cost of the rest part of the bed-day, RUB	The total cost of 1 bed-day, RUB	The annual budget for therapy, RUB
1	1 955	365	2 869	5 189	1 452 920
2	578	284	2 869	3 731	1 044 680
3	692	191	2 869	3 752	1 050 560
4	646	191	2 869	3 706	1 037 680
5	303	373	2 869	3 545	992 600
6	503	228	2 869	3 600	1 008 000
7	119	274	2 869	3 262	913 360
8	315	240	2 869	3 424	958 720
9	108	213	2 869	3 190	893 200
10	198	199	2 869	3 266	914 480
11	114	213	2 869	3 196	894 880
12	140	344	2 869	3 353	938 840
13	209	399	2 869	3 477	973 560

Table 4

Modelling of the effect of introduction of innovative infusion-detoxification therapy on the budget of the hospital

Scheme	Number of people								Budget of traditional schemes, thousand rubles
	According to prescription papers	Model							
1	0	0	10	20	30	40	50	100	0
2	53	8	7	6	5	4	3	0	152
3	55	8	7	6	5	4	3	0	127
4	29	4	3	2	1	1	1	0	66
5	69	11	10	9	8	7	6	0	151
6	56	9	8	7	6	5	4	0	155
7	66	10	9	8	7	6	5	0	133
8	67	10	9	8	7	6	5	0	141
9	68	10	10	10	10	9	8	0	133
10	50	8	7	6	5	4	3	0	101
11	52	8	8	8	8	7	6	0	102
12	58	9	9	8	7	6	5	0	150
13	27	4	3	2	1	1	1	0	58
IN TOTAL	*п*=650	100	100	100	100	100	100	100	1468

Figure 1. The cost structure for infusion-detoxification therapy in case of poisoning with psychoactive substances
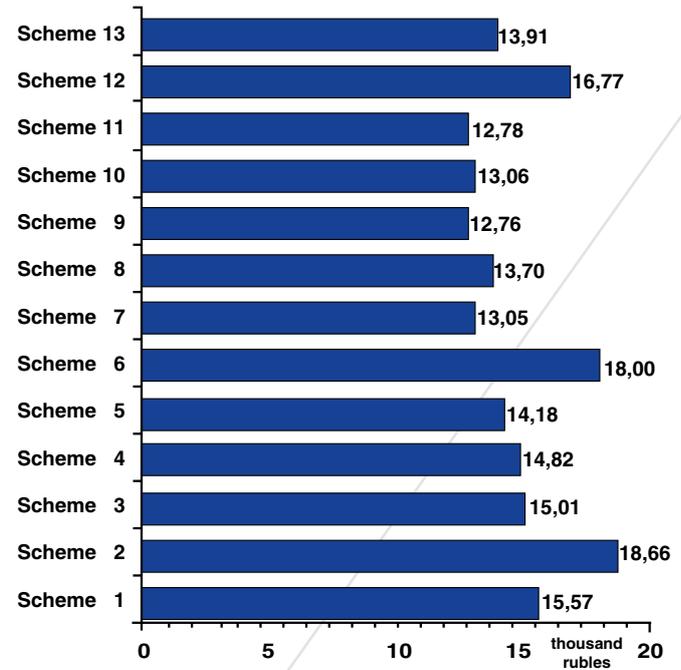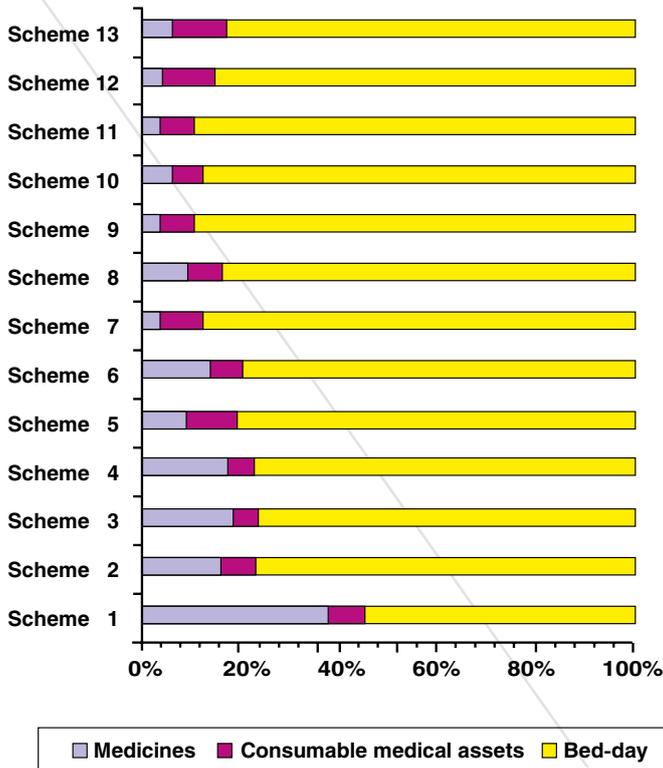

Figure 2. The results of cost-effectiveness analysis of the schemes of infusion-detoxification therapy of poisonings with psychoactive substances
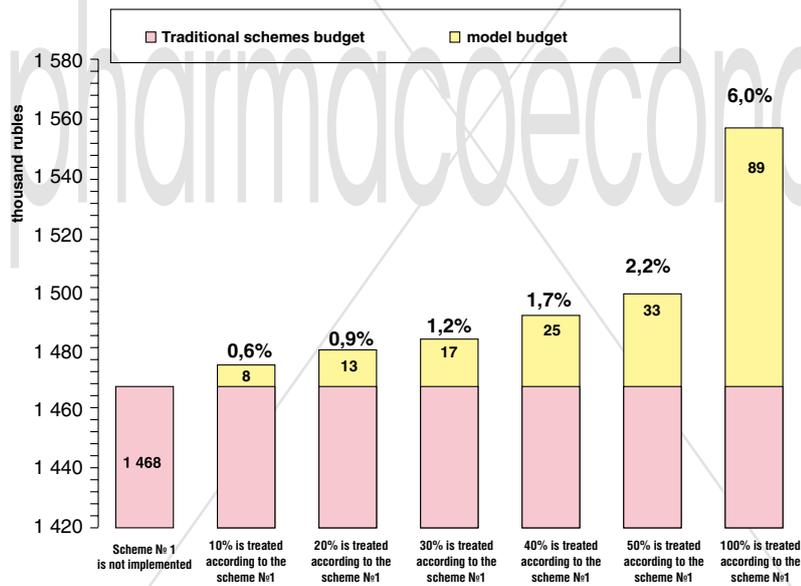

Figure 3. The results of the budget impact analysis with 100% of the treatment without the introduction of innovative scheme and the transfer in the various proportions of patients to the therapy according to this scheme

Table 5

Modelling the budget impact in the narcological hospitals for a transfer of patients to cheaper traditional scheme of infusion-detoxification therapy №9 and №12

Scheme	Number of people								Budget of traditional schemes, thousand rubles
	According to prescription papers	Model							
1	0	0	10	20	30	40	50	100	0
9	483	74	67	59	52	45	37	0	948
12	167	26	23	21	18	15	13	0	431
IN TOTAL	n=650	100	100	100	100	100	100	100	1379
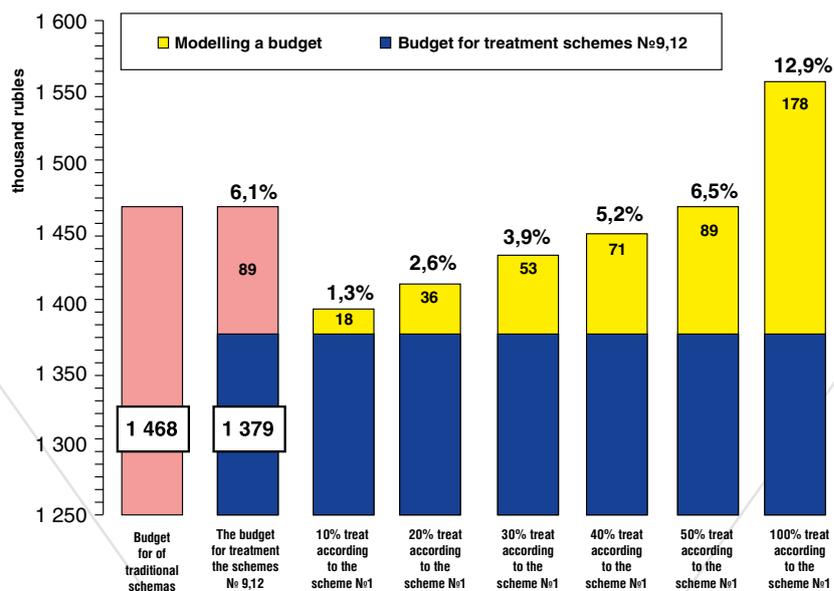
Figure 4. Analysis of «budget impact» that can be achieved when transferring patients to cheaper alternative traditional schemes №9 and 12 and taking into account the translation of varying proportion of patients to therapy using innovative scheme №1.