

<https://doi.org/10.23934/2223-9022-2019-8-4-373-378>

The Analysis of Toxicological Situation According to Three Specialized Centers of Russian Federation

I.A. Shikalova^{1*}, A.N. Lodyagin¹, I.M. Barsukova¹, A.R. Nasibullina², D.Y. Kalloyda³

Department of Clinical Toxicology

¹ I.I. Dzhanlidze St. Petersburg Research Institute of Emergency Medicine

3A Budapeshtskaya Street, St. Petersburg 192242, Russian Federation

² City Clinical Hospital No. 7

5 Marshala Chuykova Street, Kazan 420103, Russian Federation

³ City Clinical Hospital No. 34

18 Titova Street, Novosibirsk 630054, Russian Federation

* **Contacts:** Irina A. Shikalova, Cand. Med. Sci., Researcher, Department of Clinical Toxicology, I.I. Dzhanlidze Reseach Institute of Emergency Medicine. Email: shikalova@gmail.com

BACKGROUND The relevance of the study is associated with the exceptional medical and social significance of the issues of toxicological assistance. In order to improve toxicological assistance to the population, we analysed the dynamics of patient admission to major toxicological centers in St. Petersburg, Novosibirsk and Kazan in 2011–2017, which revealed a significant increase in the number of patients with a toxicological pathology and unidirectional changes in the structure of acute poisoning. We used statistical and analytical research methods. According to the results of the study, in all three centers the proportion of poisoning by narcotic substances increased, and the qualitative characteristics of poisoning changed (compared to 2011). Poisonings with opioid alkaloids and heroin haven't been substantially found recently; the main proportion of poisonings was associated with the use of synthetic drugs (phencyclidines, piperazines, synthetic cathinones, synthetic cannabinoids, amphetamines, γ -butyrolactone and 1,4-butanediol, etc.). The proportion of patients with ethanol poisoning increased significantly: the number grew by 2.5 times in St. Petersburg, 3.0 times in Novosibirsk and 30% in Kazan. At the same time, the number of drug poisoning decreased in all three centers by an average of 20–30%. The number of carbon monoxide poisoning has also decreased in St. Petersburg and Novosibirsk. Data were obtained on some regional features of poisoning. The prevalence of poisoning by cauterizing agents in Novosibirsk and by plant poisons in Kazan. Despite a decline of mortality, the absolute number of deaths by acute poisoning during the study period increased. The study resulted in an attempt to identify the main problems and tasks of the toxicological service at present and to develop mechanisms for its improvement, taking into account modern changes in the volumes and structure of acute poisonings.

Keywords: acute poisoning, drug poisoning, drugs, psychodysleptics, methadone, heroin, ethanol, alcohol, carbon monoxide, cauterizing poisons

For citation Shikalova IA, Lodyagin AN, Barsukova IM, Nasibullina AR, Kalloyda DY. The Analysis of Toxicological Situation According to Three Specialized Centers of Russian Federation. *Russian Sklifosovsky Journal of Emergency Medical Care*. 2019;8(4):373–378. <https://doi.org/10.23934/2223-9022-2019-8-4-373-378> (in Russ.)

Conflict of interest Authors declare lack of the conflicts of interests

Acknowledgments The study had no sponsorship

Affiliations

Irina A. Shikalova	Cand. Med. Sci., Researcher of the Department of Clinical Toxicology, I.I. Dzhanlidze Reseach Institute of Emergency Medicine, https://orcid.org/0000-0002-8209-2652
Irina M. Barsukova	Dr. Med. Sci., Head of the Department of Emergency Medicine Organization and Telemedicine, I.I. Dzhanlidze Reseach Institute of Emergency Medicine, https://orcid.org/0000-0002-5398-714X
Aleksey N. Lodyagin	Dr. Med. Sci., Head of the Department of Clinical Toxicology, I.I. Dzhanlidze Reseach Institute of Emergency Medicine, https://orcid.org/0000-0002-8672-2906
Aliya R. Nasibullina	Head of the Department of Toxicology, City Clinical Hospital No. 7 of Kazan, https://orcid.org/0000-0002-4586-5804
Dmitry Yu. Kalloyda	Head of the Department of Toxicology, City Clinical Hospital No. 34 of Novosibirsk, https://orcid.org/0000-0003-0383-728X

INTRODUCTION

Acute poisoning of chemical etiology is a serious social and economic problem so far. It is an important factor among leading noncommunicable diseases determining the demographic situation in Russia due to the high morbidity and premature mortality of men and women of working and fertile age. The total volume of economic losses of premature death of the working population due to acute poisonings in 1998-2004 was 11 389 200 000 rubles. [1]. According to the Federal State Statistics Service, since 2013 there has been an increase in the overall incidence of poisoning from 80,500 in 2013 to 88,100 in 2015 [2]. As can be seen from the national governmental report "On the state sanitary and epidemiological welfare of the population in the Russian Federation in 2017" acute intoxication is related to priority health and hygiene factors forming negative trends in health status [3]. In this regard, the dynamics of acute poisoning of chemical etiology is the most important epidemiological indicator. In addition, the study and analysis of the structure of poisoning is necessary to justify measures to improve and optimize medical care for the population, as well as the development of effective preventive and rehabilitation measures aimed at reducing the influence of the toxic factor as a cause of preventable morbidity and mortality. Information coverage of the toxicological situation in the regions and close interagency cooperation are of high practical importance in the framework of programs aimed at improving public health.

Aim of study. To analyze the structure of chemical etiology of acute poisoning from 2011 to 2017 in three specialized centers for acute poisoning treatment: St. Petersburg (Clinical Toxicology Department, director — A. N. Lodyagin, chief external toxicologist of NW Federal District, Dr. Med. Sci.), Novosibirsk (Regional Toxicological Center, head — D. Y. Kalloyda, chief toxicologist of the Novosibirsk Region) and Kazan (Toxicology Department, head — A.R. Nasibullina, chief toxicologist of the Ministry of Health of the Republic of Tatarstan).

MATERIALS AND METHODS

The paper analyzes the materials of the form No. 64 “Report of the center (department) of acute poisoning” (Appendix No. 6 of the Order of the Ministry of Health of the Russian Federation dated January 8, 2002 No. 9 “On measures to improve the organization of toxicological assistance to the population of the Russian Federation”). Four main groups of poisonings were identified: drugs (ICD-10 T36 – T39 and T41 – T50); narcotic substances (ICD-10 T40); alcohol (ICD-10 T51) and other poisons (ICD-10 T52-T65). Statistical data processing was carried out using the application package *Excel* 2010.

RESULTS AND DISCUSSION

The data on the number of patients hospitalized in the toxicological centers of St. Petersburg, Novosibirsk and Kazan for the period from 2011 to 2017 indicate a significant increase in the number of patients of toxicology field in St. Petersburg and Novosibirsk ($r_{\text{time-number}} = 0.94$ and 0.85 , the relation is strong and direct) and less significant in Kazan (Fig. 1).

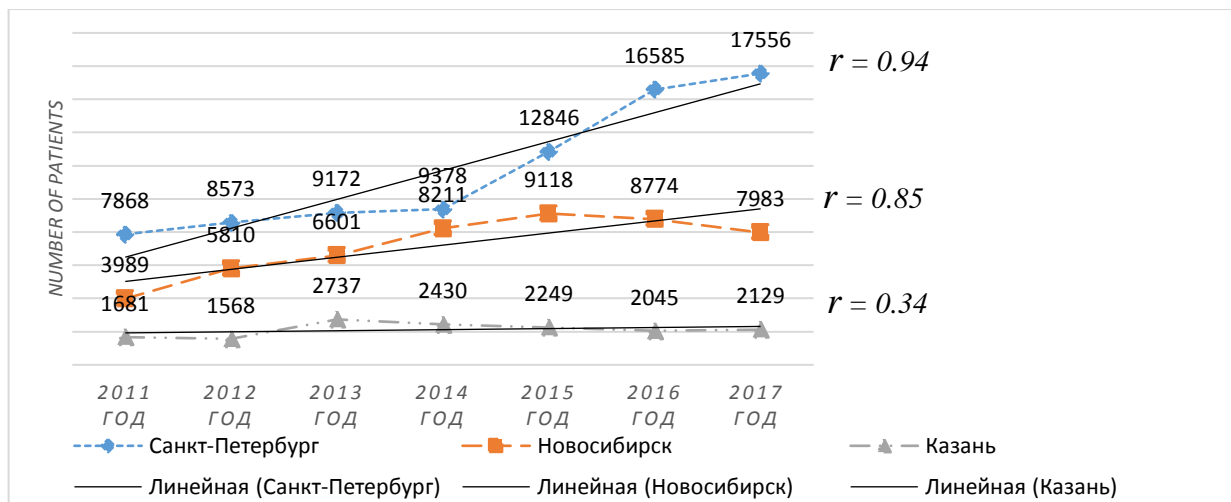


Fig. 1. The number of patients with acute poisoning delivered to toxicological centers in St. Petersburg, Novosibirsk and Kazan in 2011–2017

In all three centers, unidirectional changes are noted in the groups selected for analysis: this is an increase in the number of patients with poisonings with narcotic substances and alcohol and a decrease in the number of poisonings with drugs and other poisons, with the exception of Kazan, where the number of patients with poisonings with other poisons slightly increased (Table 1). The data on the number of patients with alcohol poisoning: in 2017 (compared with 2011) 7,207 more in St. Petersburg; 3,807 more in Novosibirsk; 275 patients in Kazan. The number of patients with drug poisoning has also increased. In 2017 (compared with 2011): 3,137 more patients in St. Petersburg, 675 more in Novosibirsk, and 239 more in Kazan. Thus, the proportion of patients with alcohol and drug poisoning in 2017 became 89% in the Toxicological Center of St. Petersburg, 85% in Novosibirsk and 74% in Kazan.

Table 1

The dynamics and structure of acute poisoning according to the toxicological centers of St. Petersburg, Novosibirsk and Kazan in 2011-2017

Toxic agent	2011		2012		2013		2014		2015		2016		2017		Dynamics			Cor. coef. $r_{(time-amount)}$
	Abs.	%	Abs.	%	Abs.	%	Abs.	%	Abs.	%	Abs.	%	Abs.	%	+/- Abs.	+/- %	Portion in structure	
Centre of Acute Poisonings Treatment, I.I. Dzhaneldidze St. Petersburg Research Institute of Emergency Medicine, St. Petersburg																		
Medications (T36-T39, T41-T50)	2114	26.9	1,736	20.2	1,401	15.3	1,610	17.2	1,475	11.5	1,464	8.8	1,504	8.6	-610	-28.9	-18.3	-0.72
Narcotic substances and psychodysleptics (T40)	800	10.2	1,879	21.9	2,472	27.0	3,110	33.2	3,451	26.9	3,676	22.2	3,934	22.4	3,134	392	12.2	0.96
Alcohol (T51)	4,536	57.7	4,473	52.2	4,894	53.4	4,254	45.4	7,572	58.9	11,055	66.7	11,738	66.9	7,202	159	9.2	0.89
Other (T52-T65)	418	5.3	485	5.7	405	4.4	404	4.3	349	2.7	390	2.4	376	2.1	-42	-10.0	-3.2	-0.68
Total	7,868	100	8,573	100	9,172	100	9,378	100	12,846	1.0	16,585	100	17,556	100	9,688	123		0.94
Toxicology Department, City Clinical Hospital No. 34, Novosibirsk																		
Medications (T36-T39, T41-T50)	1,157	29.0	1,168	20.1	1,117	16.9	1,032	12.6	936	10.3	873	9.9	835	10.5	-322	-27.8	-18.5	-0.98
Narcotic substances and psychodysleptics (T40)	79	2.0	448	7.7	756	11.5	1101	13.4	1259	13.8	987	11.2	754	9.4	675	854	7.5	0.69
Alcohol (T51)	2,228	55.9	3,693	63.6	4,270	64.7	5,582	68.0	6,522	71.5	6,522	74.3	6,035	75.6	3,807	170	19.7	0.91
Other (T52-T65)	525	13.2	501	8.6	458	6.9	496	6.0	401	4.4	392	4.5	359	4.5	-166	-31.6	-8.7	-0.94
Total	3,989	100	5,810	100	6,601	100	8,211	100	9,118	100	8,774	100	7,983	100	3,994	100		0.85
Toxicology Department, City Clinical Hospital No. 7, Kazan																		
Medications (T36-T39 и T41-T50)	471	28.0	425	27.1	583	21.3	655	27.0	307	13.7	327	16.0	377	17.7	-94	-20	-10.3	-0.46
Narcotic substances and psychodysleptics (T40)	161	9.6	167	10.7	247	9.0	214	8.8	521	23.2	354	17.3	400	18.8	239	148	9.2	0.78
Alcohol (T51)	894	53.2	845	53.9	1,677	61.3	1,382	56.9	1,251	55.6	1,163	56.9	1,169	54.9	275	30.8	1.7	0.28
Other (T52-T65)	155	9.2	131	8.4	230	8.4	179	7.4	170	7.6	201	9.8	183	8.6	28	18.1	-0.6	0.40
Total	1,681	100	1,568	100	2,737	100	2,430	100	2,249	100	2,045	100	2,129	100	448	26.7		0.34

The number of patients with drug poisoning decreased by 20-30% in all three centers. The proportion of drug poisoning in 2015–2017 was 8–9% in St. Petersburg, 10–11% in Novosibirsk and 14–18% in Kazan, while in 2011, drug poisoning in these centers accounted for 27–29% of all poisonings. The most significant decrease in the number of drug poisoning was noted in Novosibirsk. In 2017, there were 322 patients less hospitalized than in 2011 ($r = -0.98$, negative and strong correlation). In St. Petersburg, the number of patients with drug poisoning also significantly decreased, and in 2017 the number of admissions decreased by 610 ($r = -0.72$ negative and strong relation).

The situation in Kazan is somewhat different, where from 2011 to 2014 the number of drug poisoning grew: in 2014 there were 184 (39%) more than in 2011; and since 2014, drug poisoning in Kazan has become noticeably decreased: compared to 2014, the number of patients decreased by 278 (42%) in 2017. Due to the fact that suicidal intentions are realized mainly due to medical preparation poisoning, against a background of reducing the amount of drugs poisonings, poisonings with suicidal purposes decreased as well. The decrease in the number of patients with medical agents intoxication is probably associated with the improvement of psychopharmacological treatment and tightening steps to regulate psychotropic drugs (since 2015, a number of psychotropic drugs has been included in the list of IV subject-quantitative account of drugs) as well as the result of close interaction between psychiatrists and toxicological services. Perhaps a decrease in “suicidal poisoning” is dictated by an increase in the standard of living of the population. Despite the positive trend in hospital incidence of drug poisoning, mortality in this type of poisoning remains high: 2–4.3% in St. Petersburg, 0.5–2% in Novosibirsk and 1–3.1% in Kazan.

Data from poison control centers indicate an extremely unfavorable epidemiological situation in the regions caused by an increase in the number of poisonings with drugs and psychodysleptics. But the indicators of the increase in the number of patients with drug poisoning look like this: in 2017 figures grew by 3,134 cases in St. Petersburg compared with 2011 ($r = 0.96$), by 675 cases in Novosibirsk ($r = 0.67$) and by 235 in Kazan ($r = 0.78$). The structure of drug poisoning has also undergone significant changes over the years. Recently, practically no poisoning with opium alkaloids and heroin has been found in St. Petersburg, unlike in 2011, when half of all poisonings were caused by drugs. The peak of narcotic poisoning with these substances occurred in 2014, when 118 patients were hospitalized with heroin poisoning and 572 with opiate poisoning. In 2017, there were already 1 and 32 patients, respectively.

Since 2013, there has been a significant increase in the number of poisonings with plant cannabinoids (from 24 in 2012 to 271 in 2017; $r = 0.98$) and psychostimulants (from 58 in 2012 to 774 in 2017; $r = 0.95$). A distinctive feature of the work of the toxicological service of St. Petersburg 7–8 years ago was a large number of observations regarding street methadone poisoning, and the number of patients with this type of poisoning increased annually: in 2011, 233 patients were hospitalized with methadone poisoning and there were already 1,204 such patients ($r = 0.81$) in 2017. But the great part of drug poisoning in St. Petersburg is currently caused by the intake of other drugs (phencyclidines, piperazines, synthetic cathinones, synthetic cannabinoids, amphetamines, γ -butyrolactone and 1,4-butanediol, etc.) and unidentified narcotic substances ($r = 0.85$). Along with the general increase in the number of patients, there has been an increase in the number of severe forms of poisoning with narcotic substances. If in 2011 23 cases of drug poisoning were fatal, in recent years an average of 45.2 ± 7 patients have died, and most often the cause of fatal poisoning is methadone.

In Novosibirsk, an average of 95.3 ± 11 patients per year are hospitalized with opiate and opioid poisoning. Whereas in 2011 the majority of opioid poisoning was caused by opium alkaloids, poisoning with a semisynthetic opioid, heroin, has prevailed recently. The bulk of poisoning by narcotic substances in Novosibirsk is associated with psychodysleptics (hallucinogens), which have been registered within high figures since 2013. At the same time, an average of 98.4 ± 16 was admitted with parenteral drug poisonings of the “salt” and “speed” type, and 692.4 ± 125 patients per year were admitted with smoking mixtures poisonings. In Novosibirsk, 6–8 drug poisonings were fatal annually, with the etiological factor for fatal poisoning being heroin, amphetamine-containing psychodysleptics and cathinones (“salt” and “speed”).

In Kazan, poisoning by opiates, opioids, and natural cannabinoids is single. The main problem, as in St. Petersburg and Novosibirsk, is poisoning with synthetic drugs and psychodysleptics. The admission of patients with this type of poisonous substances often causes severe poisoning, which has been observed since 2015 (an average of 272.7 ± 0.9 patients per year).

Since 2012, the toxicological centers of a number of regions have experienced enormous pressure caused by the closure of medical detoxification centers. In most constituent entities of the Russian Federation, people who are intoxicated are delivered by ambulance personnel of toxicological specialization. The number of patients in alcohol intoxication in the I.I. Dzhanlidze Research Institute of Emergency Medicine increased more than twice ($r = 0.89$). An even more significant increase in the number of patients was noted in Novosibirsk ($r = 0.92$), which creates almost extreme working conditions for medical personnel due to the reduction in the number of beds (the toxicology department was reduced by 12 beds in 2015). The reports of the Novosibirsk Toxicology Center provide data on the number of patients delivered with ethanol poisoning (in an alcoholic coma) and patients delivered in alcoholic intoxication (patients with coordinating and behavioral disorders). It is noteworthy that the overwhelming majority (over 70%) are intoxicated patients who do not need specialized medical care.

In Kazan, there is no such increase in the flow of patients with alcohol poisoning, since patients who are intoxicated with alcohol (according to the Order dated 08.16.1997 No. 296) are hospitalized according to the therapeutic departments at the place where the patient was taken to the nearest medical facility, and to the toxicological department only in severe alcohol poisoning (in an alcoholic coma). Ethanol poisoning, unfortunately, still leads to deaths. During the study period, in the Center for the Treatment of Acute Poisoning in St. Petersburg, 125 ethanol poisonings were fatal, in the toxicological department of Novosibirsk 31 patients died from alcohol poisoning, and in Kazan 46 patients died from ethyl alcohol poisoning.

The proportion of “other poisons” in the total structure of poisoning decreased in all three centers, but in absolute terms the changes in the number of patients in this group are insignificant: in St. Petersburg and Novosibirsk, less patients were hospitalized in 2017 compared to 2011 (by 42 and 66 cases, respectively), while in Kazan - more by 28 people. Since almost half of the observations in this group are carbon monoxide poisoning, it is this type of poisoning that has an overwhelming effect on the dynamics of the whole group. In St. Petersburg, the number of carbon monoxide poisoning gradually decreased from 243 in 2011 to 168 patients in 2017 ($r = -0.90$). At the same time, mortality remains quite high (4.4–9.6%). In Novosibirsk, there was also a decrease in the flow of patients with carbon monoxide poisoning from 172 in 2011 to 120 patients in 2017 ($r = -0.94$) and mortality to the level of 1–2%. In Kazan, by contrast, there was an increase in the admission of patients with carbon monoxide poisoning from 53 in 2011 to 67 patients in 2017 ($r = 0.76$), and the mortality rate remained at the level of 1.5–2.5%.

With poisoning by corrosive substances, on average 88 ± 8.6 patients per year are hospitalized in St. Petersburg, almost twice more in Novosibirsk (164 ± 8.4 people per year) and Kazan (16 ± 2) people. A statistically significant decrease in the number of poisonings by corrosive substances was detected only in Novosibirsk ($r = -0.75$). The mortality due to poisoning by corrosive substances was 4.4–15% in St. Petersburg, 7.8–10.6% in Novosibirsk and 8.3–33.3% in Kazan. Statistical analysis of the frequency of other poisonings did not reveal significant dynamic changes. With poisoning by substances of plant origin (mainly mushrooms) in St. Petersburg and Novosibirsk, an average of 13 ± 2.7 patients are hospitalized per year, in Kazan there are significantly more such patients — 49 ± 3.8 per year.

Poisoning of animal origin (snake bites) occur in 11 ± 2 patients per year on average in Novosibirsk and Kazan, and in 16 ± 1.9 cases in St. Petersburg. Severe poisoning with high mortality is caused by accidental or deliberate use of organic solvents, halogenated aromatic and non-aromatic hydrocarbons. Such patients are admitted to toxicological centers annually: 29 ± 3.1 patients per year in St. Petersburg, 31 ± 1 in Novosibirsk, and 11 ± 1.6 in Kazan.

Thus, in the group of “other poisons” a number of regional differences were revealed. In St. Petersburg, a significant part of poisoning in this group is carbon monoxide poisoning, in Novosibirsk — poisoning by corrosive substances, while in Kazan — poisoning by plant poison.

Table 2

The number of patients hospitalized with the toxic effects of alcohol in the toxicological centers of St. Petersburg, Novosibirsk and Kazan in 2011–2017

Toxic agent	Number of patients							Dynamica		Cor. coef. $r_{(time-amount)}$
	2011	2012	2013	2014	2015	2016	2017	+/- Abs.	+/- %	
Centre of Acute Poisonings Treatment, I.I. Dzhanelidze St. Petersburg Research Institute of Emergency Medicine, St. Petersburg										
Ethanol	4,536	4,473	4,894	4,254	7,572	11,055	11,738	7,202	158.8	0.89
Other alcohols	3	8	13	15	40	36	43	40	1,333	0.95
Toxicology Department, City Clinical Hospital No. 34, Novosibirsk										
Ethanol	2,209	3,234	4,252	5,565	6,492	6,492	6,021	3,812	172.6	0.92
poisoning	-	1,129	853	1,099	1,178	1,178	1,453	324	28.7	0.74
intoxication	-	2,100	3,399	4,466	5,314	5,314	4,568	2,468	117.5	0.81
Other alcohols	16	21	13	8	24	24	6	-10	-62.5	-0.14
Toxicology Department, City Clinical Hospital No. 7, Kazan										
Ethanol	886	845	1,670	1,377	1,249	1,163	1,163	277	31.3	0.28
Other alcohols	8		7	5	2		5	-3	-37.5	-0.67

The analysis of the obtained data also showed an increase in the number of deaths due to acute poisoning of chemical etiology (Table 3). In 2017, the number of patients who died increased by 50.9% compared to 2011 in the Toxicological Center of St. Petersburg, by 60% in the Toxicological Center of Novosibirsk and by 38.9% in the Toxicology Department of Kazan. The mortality in St. Petersburg and Novosibirsk decreased from 1.5% to 1% and from 0.8% to 0.6%, respectively, due to a significant increase in the flow of incoming patients.

Table 3

The number of deaths in acute poisoning of chemical etiology and mortality in toxicological centers in St. Petersburg, Novosibirsk and Kazan in 2011–2017

Toxicology center	2011		2013		2015		2017		Dynamics			Cor. coef. $r_{(time-amount)}$
	Abs.	Mortality	Abs.	Mortality	Abs.	Mortality	Abs.	Mortality	+/- Abs.	+/- %	Mortality	
St. Petersburg	112	1.4	154	1.7	152	1.2	169	1.0	57	50.9	-0.5	0.81
Novosibirsk	30	0.8	53	0.8	49	0.5	48	0.6	18	60.0	-0.2	0.33
Kazan	18	1.1	24	0.9	33	1.5	25	1.2	7	38.9	0.1	0.71

CONCLUSION

The study revealed general trends and problems faced by toxicological services in different regions of the country. First of all, this is an increase in the flow of patients with acute poisoning, especially in those regions where after the closure of sobering-up stations, patients who are intoxicated are delivered according to the toxicological departments. In addition, starting in 2013, the admission a large number of synthetic drug poisoning was recorded, which increased the proportion of drug poisoning in the structure of toxicological patients by 4–5 times. The increase in the flow of patients with various types of poisoning by more than twice increased the load on the staff of toxicological centers and worsened the conditions for patients in the department. The number of deaths in acute poisoning has also increased, mainly due to poisoning with narcotic substances and ethanol. Also, an analysis of the toxicological situation in the regions showed a number of positive aspects, which include a decrease in the number of poisonings with drugs and some types of poisoning, in particular carbon monoxide and corrosive substances.

Thus, we observe a significant change in the structure of acute poisoning of chemical etiology due to an increase in the share of narcotic and alcohol poisoning for the period from 2011 to 2017. Changes in the structure of poisoning dictate the need to revise

the traditional principles of the work of toxicological departments, adjust routing schemes for patients with separate drug and alcohol intoxication, expand the bed capacity of toxicological departments, differentiated approach to hospitalization of patients in alcohol intoxication using dynamic monitoring beds of emergency departments help. The increased flow of patients with antisocial behavior requires additional measures to ensure the safety of medical personnel and patients of toxicological departments. Given the fact that poisoning belongs to the group of preventable causes of death, an important aspect of providing medical care to these patients is the organization of the most effective preventive work involving various psychotherapeutic and narcological programs already at the stage of inpatient treatment of patients with acute poisoning. The solution to the global social problem, which is a significant increase in cases of drug poisoning, is directly related to the close interaction of the toxicological and narcological services, as well as the joint coordinated work of toxicological centers with law enforcement agencies and the improvement of legislation in the field of prevention of alcoholism and drug addiction.

REFERENCES

1. Luzhnikov EA. (ed.) *Meditsinskaya toksikologiya*. Moscow: GEOTAR-Media Publ.; 2012. (In Russ.)
2. *Zdravookhranenie v Rossii 2017 god. Statisticheskiy sbornik*. Moscow: Federal'naya sluzhba gosudarstvennoy statistiki (Rosstat) Publ.; 2017. (In Russ.)
3. *O sostoyanii sanitarno-epidemiologicheskogo blagopoluchiya naseleniya v Rossiyskoy Federatsii v 2017 godu: Gosudarstvennyy доклад*. Moscow: Federal'naya sluzhba po nadzoru v sfere zashchity prav potrebiteley i blagopoluchiya cheloveka Publ.; 2018. (In Russ.)

Received on 11.03.2019

Accepted on 29.03.2019