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ORGANIZATION OF HEALTH, MEDICAL SCIENCE AND EDUCATION

E.V. Kazakova

ASSESSMENT OF POPULATION, AGE AND SEX STRUCTURE CHANGE IN TERRITORIAL SUBJECTS OF THE RUSSIAN FEDERATION IN THE TERRITORY OF THE FEFD

ABSTRACT

Successful functioning of territorial programs of the preferential provision of medicines (PM) is possible at the correct assessment of population, changes of age and sex structure as bases of formation of requirement and objective justification of the application medical institutions taking into account medico-demographic indicators and structure of incidence of the population in territorial subjects of the Russian Federation in the territory of the FEFD.

The analysis of age and sex composition in territorial subjects of the Russian Federation in the territory of the FEFD reveals detailed features at a negative gain of male population, and is result of evolution of reproduction of the population. The main reason of the Russian «female overpoise», including territorial subjects of the Russian Federation in the territory of the FEFD – a consequence of the Great Patriotic War of the 20th century, participation of the Russian Federation in the local and international conflicts. Also male «supermortality» at able-bodied age and on diseases for the studied period (2010-2014) remains very high.

Keywords: subjects, economics, evaluation, Far, Eastern, Federal, District, FED, coefficient of demographic loading, indicators, reproduction, working, population, Russia, Russian Federation.

INTRODUCTION

The important direction in work on implementation of programs of supply of medicines of socially unprotected segments of the population is formation of requirement and justification of the application of medical institutions. Formation of requirement has to begin from the physician of primary link or narrow experts on acquisition of

medicines and has to be made taking into account data of the personified account, a medico-demographic situation and structure of a case rate of the population in territorial subjects of the Russian Federation in the territory of the FEFD for successful functioning of regional programs of supply of medicines. Certainly, at the same time the rest of medicinal preparations in drugstores and

in warehouses, the consumption of drugs for the previous period, and also history of their sales and appointment has to be considered.

MATERIALS AND METHODS OF A RESEARCH

Comparative systems analysis; information and analytical; assessment of dynamic rows; statistical data handling by means of the plate Microsoft Excel

2010 processor.

RESULTS AND DISCUSSION

From 2010 for the beginning of 2015 population in territorial subjects of the Russian Federation in the territory of the FEFD was reduced by 1,72%, (table No. 1).

At the same time population of Yakutia approaches 1 million inhabitants. The Republic of Sakha — the only region in the Far East where the population steadily doesn't decrease, but grows. According to data of regional service of statistics, for 2015 in the Republic of Sakha (Yakutia) it became 2979 inhabitants more. As of January 1, 2016 nearly 959, 9 thousand people live in the Republic.

In all other territorial subjects of the Russian Federation of the Far East region, according to regional statistics, population becomes less every year.

Migration for 1992-2002 has made 88,5% of the general reduction of number of inhabitants in the region. The peak of migratory outflow has fallen on 1992-1995 when there was a process of intensive outflow of the population of northern territories of the federal district.

Decrease in volumes of intensity of migration doesn't demonstrate in recent years stabilization of migratory processes and furthermore, economy and a social situation in regions of the FEFD [4], (table No. 2).

The main reason for reduction of migration has rather economic character, owing to a difficult social and economic situation in certain territories that shows migration percent within the region at a smaller ratio to migration percent from other regions of Russia and because of her limits in the FEFD (table No. 3).

Rate of decrease in unemployment rate (table No. 4) in territorial subjects of the Russian Federation in the territory of the FEFD during 2010-2014 is almost

The population of subjects of the Russian Federation

Table 1

in FEFD (2010-2015 rr.), thousand people					
	2010 year	2011 year	2012 year	2013 year	01.01.2015 year
Far East Federal district	6320	6285	6266	6252	6211
The Republic Of Sakha (Yakutia)	959	958	956	956	956
Kamchatka territory	323	322	320	320	317,2
Primorsky Krai	1965	1953	1951	1947	1933,3
Khabarovsk territory	1349	1343	1342	1342	1338,3
Amursk region	835	829	821	817	809,9
Magadan region	159	156	155	152	148,1
Sakhalin region	501	497	495	494	488,4
Jewish Autonomous region	178	176	175	173	168,4
Chukotka Autonomous district	51	51	51	51	50,5

Table 2

FACTORS OF MIGRATION GROWTH
per 10,000 population in the constituent entities of the Russian Federation in FEFD
(2010-2014 rr.)

	2010 year	2011 year	2012 year	2013 year	2014 year
FEFD	-49	-28	-32	-53	-40
федеральный округ	-49	-28	-32	-53	-40
The Republic Of Sakha (Yakutia)	-71	-102	-87	-96	-70
Kamchatka territory	-41	-51	-2	-38	-98
Primorsky Krai	-35	6	-6	-37	-20
Khabarovsk territory	-31	14	-4	-22	-19
Amursk region	-60	-74	-53	-71	-16
Magadan region	-141	-118	-137	-142	-153
Sakhalin region	-63	4	-31	-44	-59
Jewish Autonomous region	-49	-95	-89	-125	-108
Chukotka Autonomous district	-174	102	-66	-70	-30

comparable to the all-Russian indicator (29,9% - the Russian Federation and 25,8% - the FEFD) that doesn't reduce number of potentially possible migrants who have no means and conditions for realization of the intentions and are forced to postpone moving from the region.

The analysis of distribution of the population at the place of residence shows that in the majority territorial subjects of the Russian Federation in the territory of the FEFD the urban population

(table No. 5) has traditionally high rate of specific weight. The maximum level of an urbanization is shown by the Magadan region (95,4% of urban population), Khabarovsk territory (81,8%), the Sakhalin region (81,4%), Kamchatka territory (77,5%).

In territorial subjects of the Russian Federation in the territory of the FEFD type of age structure of the population — stationary that corresponds also to the all-Russian type of the population (table

Table 3

The distribution of the number of arrivals in the direction of movement (% of total arrivals)

	в пределах региона					из других регионов России					из-за пределов России				
	2010 year	2011 year	2012 year	2013 year	2014 year	2010 year	2011 year	2012 year	2013 year	2014 year	2010 year	2011 year	2012 year	2013 year	2014 year
FEFD	58,9	57,0	54,3	53,6	51,9	35,1	33,4	34,2	36,5	35,3	6,0	9,6	11,5	9,9	12,8
The Republic Of Sakha (Yakutia)	64,5	68,4	65,8	67,0	63,0	29,8	26,1	30,1	30,3	34,7	5,7	5,5	4,1	2,7	2,3
Kamchatka territory	30,0	26,4	20,9	21,6	24,3	45,5	43,2	41,7	48,2	46,9	24,5	30,4	37,4	30,2	28,8
Primorsky Krai	65,1	61,4	60,5	60,7	60,2	30,3	25,7	25,7	26,9	26,5	4,6	12,9	13,8	12,4	13,3
Khabarovsk territory	51,4	49,2	47,7	46,5	45,4	42,1	44,2	38,7	43,0	38,7	6,5	6,6	13,6	10,5	15,9
Amursk region	71,2	73,8	67,0	67,6	57,8	27,7	24,7	30,7	30,3	27,7	1,1	1,5	2,3	2,1	4,5
Magadan region	48,8	45,5	41,8	39,9	35,3	44,7	46,0	51,0	54,0	53,4	6,5	8,5	7,2	6,1	11,3
Sakhalin region	62,0	47,4	47,3	44,8	47,5	34,0	38,0	42,2	45,0	43,1	4,0	14,6	10,5	10,2	9,4
Jewish Autonomous region	51,1	55,2	44,2	38,7	35,5	45,3	41,8	53,4	57,8	59,8	3,6	3,0	2,4	3,5	4,7
Chukotka Autonomous district	24,6	16,0	21,1	23,9	17,7	68,0	76,3	74,9	70,1	76,8	7,4	7,7	4,0	6,0	5,5

Table 4

THE NUMBER OF UNEMPLOYED (according to the sample survey of population on problems of employment; thousand people)

	2010 year	2011 year	2012 year	2013 year	2014 year
RF	5544	4922	4131	4137	3889
FEFD	295	254	228	224	49
The Republic Of Sakha (Yakutia)	44	44	40	37	37
Kamchatka territory	13	12	11	11	11
Primorsky Krai	102	85	73	76	73
Khabarovsk territory	66	50	48	42	44
Amursk region	30	27	23	26	24
Magadan region	6	5	3	3	3
Sakhalin region	26	23	22	21	18
Jewish Autonomous region	8	8	7	7	7
Chukotka Autonomous district	1	2	1	1	1

No. 6).

Feature in change of age structure of the population in territorial subjects of the Russian Federation in the territory of the FEFD throughout the studied period (2010-2014), was growth of a share of the population is more senior than working-age and growth is aged younger

able-bodied, but at reduction of a share of persons of working-age. In territorial subjects of the Russian Federation in the territory of the FEFD the specific weight of the population is more senior than working-age has grown by 2015 against 2010 by 9,9%, it is more than the all-Russian indicator for 2,3% for the studied

period (across the Russian Federation – 7,6%).

It is known that not only the age structure, but also education level, qualifications in many respects can determine the labor capacity of the territory.

On the basis of types of age structure of the population of the FEFD (G. Sundberg's classification), coefficients of demographic loading can be defined (table No. 7). In the analysis of an indicator – the coefficient of demographic loading which shows how many it is the share the unemployed population of 1 000 people of the working-age occupied in economy can be established increase in loading by the population more young than working-age and more active increase in coefficient of demographic loading by the population is more senior than working-age in territorial subjects of the Russian Federation in the territory of the FEFD. The comparative analysis of a gain of persons on coefficient of demographic

Table 5

The proportion of urban and rural population in the total population in subjects of the Russian Federation in FEFD, for the period 2010-2014 (%)

	Городское население					Сельское население				
	2010	2011	2012	2013	2014	2010	2011	2012	2013	2014
RF	73.8	73.9	74.0	74.2	74.0	26.2	26.1	26.0	25.8	26.0
FEFD	74.8	74.9	75.1	75.3	75.4	25.2	25.1	24.9	24.7	24.6
The Republic Of Sakha (Yakutia)	64.1	64.6	64.9	65.2	65.3	35.9	35.4	35.1	34.8	34.7
Kamchatka territory	77.4	77.5	77.1	77.4	77.5	22.6	22.5	22.9	22.6	22.5
Primorsky Krai	76.1	76.3	76.6	76.7	76.9	23.9	23.7	23.4	23.3	23.1
Khabarovsk territory	81.8	81.5	81.5	81.7	81.8	18.2	18.5	18.5	18.3	18.2
Amursk region	66.9	67.0	67.1	67.1	67.3	33.1	33.0	32.9	32.9	32.7
Magadan region	95.5	95.7	95.8	95.3	95.4	4.5	4.3	4.2	4.7	4.6
Sakhalin region	79.8	80.3	80.8	81.2	81.4	20.2	19.7	19.2	18.8	18.6
Jewish Autonomous region	67.8	68.1	67.9	67.9	68.2	32.2	31.9	32.1	32.1	31.8
Chukotka Autonomous district	64.9	66.0	66.7	67.5	68.3	35.1	34.0	33.3	32.5	31.7

Table 6

The age composition of the population in subjects of the Russian Federation in FEFD, 2010-2014 (% of total population)

	The population younger than working					The population of working age					The population over working age				
	2010	2011	2012	2013	2014	2010	2011	2012	2013	2014	2010	2011	2012	2013	2014
RF	16.2	16.5	16.8	17.2	17.6	61.5	60.9	60.1	59.3	58.4	22.3	22.6	23.1	23.5	24.0
FEFD	17.4	17.6	18.0	18.4	18.8	63.4	62.7	61.9	61.0	60.1	19.2	19.7	20.1	20.6	21.1
The Republic Of Sakha (Yakutia)	23.3	23.5	23.8	24.1	24.4	63.9	63.1	62.3	61.4	60.5	12.8	13.4	13.9	14.5	15.1
Kamchatka territory	17.2	17.4	17.4	17.7	18.0	65.4	64.7	64.3	63.6	62.7	17.4	17.9	18.3	18.7	19.3
Primorsky Krai	15.4	15.6	15.9	16.3	16.7	63.0	62.4	61.6	60.7	59.8	21.6	22.0	22.5	23.0	23.5
Khabarovsk territory	15.7	16.0	16.4	16.9	17.4	63.5	62.9	62.1	61.3	60.5	20.8	21.1	21.5	21.8	22.1
Amursk region	18.2	18.5	18.9	19.4	19.6	62.3	61.3	60.5	59.4	58.7	19.5	20.2	20.6	21.2	21.7
Magadan region	16.8	17.1	17.5	18.0	18.3	66.3	65.3	64.2	63.0	62.0	16.9	17.6	18.3	19.0	19.7
Sakhalin region	16.8	17.0	17.3	17.8	18.2	63.5	62.7	61.8	60.7	59.6	19.7	20.3	20.9	21.5	22.2
Jewish Autonomous region	18.6	18.9	19.4	19.8	20.2	62.1	61.1	60.2	59.1	58.2	19.3	20.0	20.4	21.1	21.6
Chukotka Autonomous district	22.5	22.2	22.2	22.3	22.6	67.1	67.0	66.5	65.8	64.9	10.4	10.8	11.3	11.9	12.5

Table 7

Old-age dependency ratios in the constituent entities of the Russian Federation on the territory of the far Eastern Federal district for the period 2010-2014.

	Per 1,000 people of working age have persons working age														
	TOTALLY					The population younger than working					The population over working age				
	2010	2011	2012	2013	2014	2010	2011	2012	2013	2014	2010	2011	2012	2013	2014
RF	626	643	664	687	713	264	271	280	290	301	362	372	384	397	412
FEFD	577	595	616	640	664	275	281	291	302	313	302	212	325	338	551
The Republic Of Sakha (Yakutia)	566	584	604	628	652	365	372	381	392	403	201	276	223	236	249
Kamchatka territory	529	544	556	572	595	263	268	272	278	287	266	353	284	294	308
Primorsky Krai	588	603	624	648	673	245	250	259	269	280	343	336	365	379	393
Khabarovsk territory	574	590	609	630	653	247	254	264	275	287	327	328	345	355	366
Amursk region	606	630	654	682	703	292	302	313	326	334	314	269	341	356	369
Magadan region	508	532	558	586	612	254	263	274	285	294	254	324	284	301	318
Sakhalin region	575	595	619	647	677	265	271	280	293	305	310	326	339	354	372
Jewish Autonomous region	611	636	662	691	718	299	310	322	335	347	312	161	340	356	371
Chukotka Autonomous district	488	492	505	519	541	334	331	334	338	348	154	116	171	181	193

loading among persons is younger than working-age for 13,8%, for the studied period, we will compare with the all-Russian indicator which makes 14% and allows to consider it as a positive element in formation of a manpower in the territory of the Far East region.

Increase in coefficient of demographic loading by the population is more senior than working-age, for the studied period (2010-2014), in territorial subjects of the Russian Federation in the territory of the FEFD has shown percent of a gain of 82,4%. In the Russian Federation the gain of coefficient of demographic loading has made only 13,8%. Increase in loading by the population is more senior than working-age doesn't exclude risks of a social and economic situation in the region, testifies to a population postareniye that influences an indicator of economic loading, the number of the persons having the right for the set of social services (SSS) including on preferential provision of medicines increases.

The aging process of population can create serious problems in respect of increase in demographic load of those who are busy with work. At such ratio of the busy population and dependents it will be difficult to provide worthy life to the population living in the region [1; 4].

The age and sex pyramid of the population of the modern Russian Federation (fig. 1) was created under the influence of two groups of factors: evolutionary changes as consequences of natural decline in mortality and birth rate in the course of the demographic transition and perturbation influences connected with economic and social shocks of the 20-21st centuries [3].

The deformed, torn edges and strong

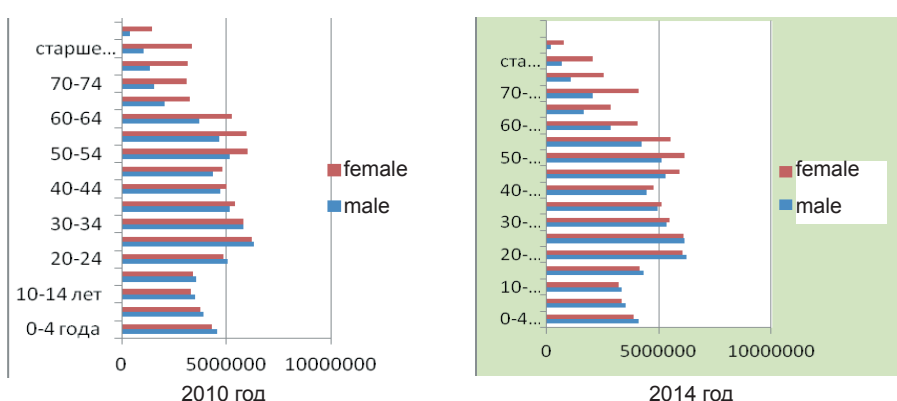


Fig.1. Age-sex pyramid of the RF population

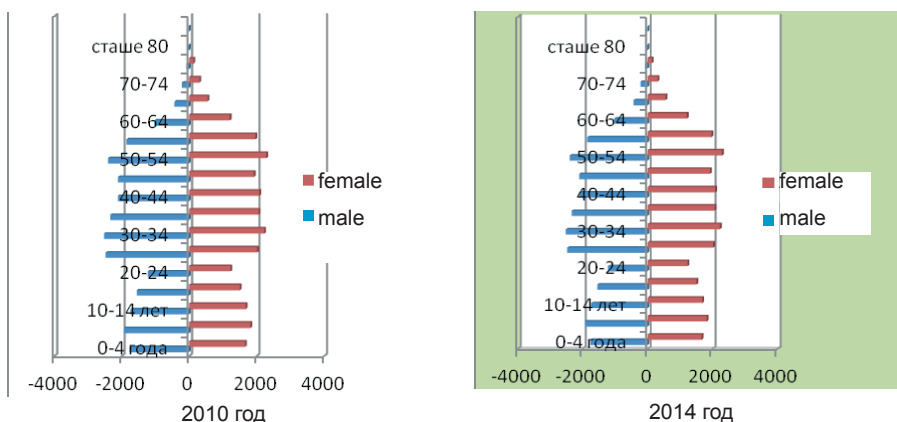


Fig.2. Age-sex pyramid of the FED population.

asymmetry of men's and female parts of a pyramid [2] were characteristic of the Russian age and sex pyramid and in territorial subjects of the Russian Federation in the territory of the FEFD during the second half of the 20th century and at the beginning of the 21st century, (fig. 1, fig. 2).

Comparison of ratios of men and women in territorial subjects of the Russian Federation in the territory of the FEFD has allowed to judge the general nature of changes of age and sex

structure of the population for the studied period (2010-2014), (table No. 8).

CONCLUSIONS

The analysis of age and sex composition in territorial subjects of the Russian Federation in the territory of the FEFD reveals detailed features at a negative gain of male population, and is result of evolution of reproduction of the population. The main reason of the Russian "female overpoise", including in territorial subjects of the Russian Federation in the territory of the FEFD

Table 8

The ratio of men and women in subjects of the Russian Federation in FEFD
(per 1,000 men, there women)

РФ	2010 year	2011 year	2012 year	2013 year	2014 year	Тпр, (%)
	1163	1162	1160	1159	1158	- 0,42
FEFD	1083	1082	1081	1081	1081	- 0,18
The Republic Of Sakha (Yakutia)	1058	1057	1059	1060	1060	0,19
Kamchatka territory	1018	1014	1001	996	1003	- 1,5
Primorsky Krai	1089	1085	1084	1085	1086	- 0,28
Khabarovsk territory	1101	1101	1097	1098	1096	- 0,45
Amursk region	1109	1112	1113	1115	1108	- 0,09
Magadan region	1057	1060	1060	1062	1065	0,76
Sakhalin region	1080	1077	1078	1077	1079	- 0,09
Jewish Autonomous region	1101	1103	1102	1105	1105	0,36
Chukotka Autonomous district	995	971	966	964	961	- 3,42

– a consequence of the Great Patriotic War of the 20th century, participation of the Russian Federation in the local and international conflicts. Also male “supermortality” at able-bodied age and on diseases for the studied period (2010–2014) remains very high.

The analysis of an age and sex pyramid allows to characterize not only demographic history of the state, but also to predict a demographic situation in the future including in territorial subjects of

the Russian Federation in the territory of the FEFD for implementation of programs of the state support, including preferential supply of medicines and other social programs.

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HYGIENE, SANITATION, EPIDEMIOLOGY AND MEDICAL ECOLOGY

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THE ENVIRONMENT AND INCIDENCE OF MALIGNANT NEOPLASMS IN THE POPULATION OF THE DIAMOND PROVINCE OF YAKUTIA

ABSTRACT

The degree of influence of anthropogenic, techno-genetic loads on the state of the environment and the characterization of the incidence of malignant neoplasms of the population of the regions that make up the diamond province of Western Yakutia are analyzed.

Keywords: diamond province, environmental factors, neoplasms, morbidity.

To the zone of the diamond province are regarded the districts of Western Yakutia: Anabarsk, Olenek, Mirninsky, Suntarsky, Nyurbinsky, Verhnevilyuysky, Vilyuysky, Olekminsky and Lensky, whose vast territory extends from the Irkutsk region to the shores of the Arctic Ocean and occupies 22.1% (684.3 thousand km²) of the territory of the Republic of Sakha (Yakutia). In the Myrninsky, Nyurbinsky, Anabar and Oleneksky districts, the diamond mining industry is developed and oil and gas production is increasing. The Vilyuysk hydroelectric power station, the Vilyuy Reservoir are constructed, huge reserves of hydrocarbons are reconnoitered, all this has caused considerable technogenic and

anthropogenic loads of the environment (E) which remain a big environmental problem of the Western Yakutia. From traditional industries in these territories, agriculture is developed, mainly the branches of meat and dairy cattle breeding, herding, farming, and also lacustrine fishing and hunting. In addition, in the Olekminsky district forestry, timber processing industry, precious stones mining are developed, and the Lensky district is a transport hub of the diamond mining, oil and gas industry, and the woodworking industry is also developed here. Climatic conditions in the regions of Western Yakutia are estimated in the range from “relatively moderate” (Olekminsky and Lensky) to “extremely

extreme” (Anabarsky, Olenek) [2].

The purpose of the study is to assess the degree of influence of anthropogenic, technogenic loads, environmental factors on the incidence of malignant neoplasms of the population living in the eon of the diamond province (Western Yakutia).

MATERIALS AND METHODS OF RESEARCH

The materials of Yakut republican oncological clinic (YROC) reporting were classified for the period from 1989 to 2010. Materials from the State report of the Ministry of Nature Protection of the Republic of Sakha (Yakutia) for the period from 2010 to 2014 were used [3, 4], Statistical data on the Territorial authority of Fed-