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THE HEALTHSTATE OF THE POPULATION OF THE FEDERAL SUBJECTS OF THE FAR EASTERN FEDERAL DISTRICT

Results of the analysis of medical demography, morbidity, physical inability parameters describing population health of the Far East federal district as a whole in the all-Russian context according to 2009-2010 official statistics are presented.

Keywords: medico-demographic situation, primary morbidity of the population, physical inability, health of the population.

Introduction. Comparative analysis of population health of the Far East federal district (FEFD) was made according to the following parameters:

1) Medico-demographic situation (birth rate, death rate, natural increase (NI), infantile death rate (ID), death rate from the main 6 reasons (including standardized), life expectancy (LE);

2) Primary morbidity of the population depending on classes of diseases;

3) Physical inability of children aged from 0 till 18 years.

Materials and methods of research. The Russian federal statistics data in the period of 2009-2010 of 83 administrative-territorial constituents of the Russian Federation [1-3] were estimatedby method of percentile. The essence of this method consists in ranking thoseconstituents of the federation which those or other parameters are below the 10-th percentile and above the 90-th percentile as territories with low and high levels of the parameters. Accordingly, constituents of the federation which parameters are from the 10-th and up to the 25-th percentile and from the 75-th and up to the 90-th percentile are included into the number of territories with the level below average and with the level above average. Clearly, those constituents of the federation which parameters are within the limits of the 25-75-th percentile are estimated as the territories of average level of the parameters. More attention was paid to the analysis of statistical data of the Republic of Sakha (Yakutia) for finding-out its position according to the parameters.

Results and discussion.

Medico-demographic situation. In 2010 the *birth rate coefficient* in the Russian Federation

was equal to 12.5 per 1000 population. From constituents of the FEFD only the Republic of Sakha (Yakutia) and the Chukchi autonomous region had high (16.8) and above average (14.7) levels of birth rate accordingly (Tab. 1). According to *death rate coefficient* (the Russian Federation – 14.2 per 1000): the Republic of Sakha (Yakutia) had low level (9.8) and Kamchatka territory and Magadan area had below average level (12.6-13.0).*Natural increase*(the Russian Federation – 1.7): the Republic of Sakha (Yakutia) had high level of this parameter (7.0),the Chukchi autonomous region had the level above average (0.9). More favourable medico-demographic situation as a whole across the Russian Federation was in the North-Caucasian federal district (FD) and rather unfavourable one was in the Central federal district.

Infantile death rate in Russia in 2010 was 7.5 per 1000 infants born alive. In the FEFD only one territory had the level below average (5.9) - Sakhalin area, the Republic of Sakha (Yakutia) had average level (7.2). Khabarovsk territory, Amurskaya area, the Jewish autonomous region and the Chukchi autonomous region were among the territories with high level of infantile death. Kamchatka and Primorskiy territories and also Magadan area had the level of infantile death above average (Tab. 2). Besides the FEFD the North-Caucasian FD also had rather high level of infantile death. The Northwest federal district had the best situation as far as this parameter.

Analysis of death rate from 6 classes of diseases was made: infectious and parasitogenic diseases, tumors, circulatory system diseases, respiratory system diseases, digestive system diseases, traumas, poisonings and some other external reasons (external reasons of death) (Tab. 3). Primorskiy and Khabarovsk territories, Amurskaya area and the Jewish autonomous region had high and above average levels of *some infectious and parasitogenic diseases,* below average level of this parameter was marked in the Republic of Sakha (Yakutia). The situation according to*tumors* death rate was a bit better: the Republic of Sakha (Yakutia) and the Chukchi autonomous region had death rate low and below average accordingly. The Republic of Sakha (Yakutia) had low death rate from *circulatory system diseases* (CSD) and Kamchatka territory, Magadan area, the Chukchi autonomous region had the levels below average. Death rate from *respiratory system diseases* (RSD) was below average in the RS (Y) and Kamchatka territory, high level of death rate was in Magadan area. High and above average levels of death rate from *digestive system diseases* (DSD) were in Primorskiy territory, Magadan and Sakhalin areas, the Jewish and the Chukchi autonomous regions, below average - in Kamchatka territory. The death rate from *external reasons*was high and above average in Khabarovsk territory, Amurskaya and Sakhalin areas, the Jewish and the Chukchi autonomous regions.

The similar analysis was made according to standardized parameters as possible influence of age characteristics of the population of the region on death rate was supposed (Tab. 4). So, 6

constituents of the FEFD from 9 were included into the number of regions with rather low middle age level of the population – 36.7 and younger while in the Russian Federation (2009) it was 38.9 years.

As far as *some infectious and parasitogenic diseases* is concerned high and above average death rate was marked besides the above mentioned 4 regions in the Chukchi autonomous region, *tumors* - in 7 constituents of the FEFD except the Republic of Sakha (Yakutia) and Amurskaya area. According to death rate from *circulatory system diseases* already 8 constituents of the FEFD from 9 except the Republic of Sakha (Yakutia) were among unfavourable ones. High and above average death rates from *respiratory system diseases, digestive system diseases and from external reasons* were registered in 6 regions from 9 in the FEFD. Influence of younger structure of population on death rate from the main reasons was obvious in the FEFD.

Life Expectancy (2009): only Primorskiy territory had the average level of this parameter. Amurskaya, Magadan and Sakhalin areas, the Jewish and the Chukchi autonomous regions had low level of life expectancy totally in both sexes and separately in men and women (Tab. 5).

Such unfavourable medico-demographic situation was observed in the Far East federal district in comparison with other constituents of the Russian Federation. In its turn, the Russian Federation was not among the leading countries of the world: among 50 countries of Europe, Asia, Africa, America and Australia our country had unsatisfactory parameters of general death rate and natural increase of the population.

Morbidity of Population. The analysis of primary morbidity of the FEFD population according to main classes of diseases was made. On the whole the high level of primary morbidity was registered in the Republic of Sakha (Yakutia) and the Chukchi autonomous region. And now let us consider morbidity rate separately according to main classes of diseases noting only unsatisfactory parameters.

High level of morbidity of *some infectious and parasiogenic diseases* was marked in Magadan and Sakhalin areas, above average level - in Kamchatka territory and the Chukchi autonomous region. High level of *tumor* morbidity was observed only in the Chukchi autonomous region. *Blood diseases*: the level above average was in the Republic of Sakha (Yakutia) and the Chukchi autonomous region. High level of *endocrinic system diseases* morbiditywas marked in the Republic of Sakha (Yakutia) and Amurskaya area, above average level - in Sakhalin area. *Mental disorders*: high level was in Sakhalin area and the Chukchi autonomous region, above average level - in Primorskiy territory and Magadan area. *Nervous system diseases*: high level morbidity was in the Republic of Sakha (Yakutia) and the Chukchi autonomous region.

High level of *ophthalmic diseases* morbidity was noted in the Republic of Sakha (Yakutia)

and the Chukchi autonomous region. *Aural diseases* morbidity was high in the Chukchi autonomous region. *Circulatory system diseases*: high level was marked in Kamchatka territory, above average level - in the Chukchi autonomous region. High level of *respiratory system diseases* was also observed in the Republic of Sakha (Yakutia) and the Chukchi autonomous region. High level of d*igestive system diseases* besides the Republic of Sakha (Yakutia) and the Chukchi autonomous region was observed in Sakhalin area. *Skin diseases*: high level of morbidity was in the Chukchi autonomous region, above average level was observed in the Republic of Sakha (Yakutia).

High level of *musculoskeletal system* diseases was observed in the Chukchi autonomous region, above average level - in Sakhalin area. High level of *urinogenital system diseases* was also observed in the Chukchi autonomous region. According to the class*«Pregnancy, parturition and postpartum period»*high level of morbidity was marked in Magadan and Sakhalin areas. High level of *congenital anomalies* was observed in the Jewish autonomous region, above average level - in Kamchatka territory and Amurskaya area. In the class *«Symptoms, signs and abnormalities not classified in other headings»* worse situation was in Primorskiy territory. *External reasons of death*: high level of traumas and poisonings was marked in Primorskiy territory and the Chukchi autonomous region, above average level - in the Republic of Sakha (Yakutia) and Magadan area.

It is seen that in the all-Russian context the Republic of Sakha (Yakutia) had high or above average levels of morbidity in 8 classes of diseases from 18.

Primary morbidity of socially significant diseases.

High level of *active tuberculosis* was marked in Primorskiy territory, Amurskaya area and the Jewish autonomous region, above average level - in Khabarovsk territory, Sakhalin area and the Chukchi autonomous region. *HIV-infection* was diagnosed for the first time and its level was low in Amurskaya area, below average level was in the Republic of Sakha (Yakutia), Kamchatka territory, Sakhalin area and the Jewish autonomous region. *Malignant tumors*: low level was marked in the Republic of Sakha (Yakutia), below average - in Amurskaya area, the Jewish and the Chukchi autonomous regions.

High level of *mental disorders unconnected with drug addiction* was marked in the Chukchi autonomous region, above average level was in the Republic of the Sakha (Yakutia), Amurskaya and Magadan areas, below average level was observed in Kamchatka territory. *Alcoholic psychosis*: high level was marked in the Republic of Sakha (Yakutia), Kamchatka territory, Magadan, Sakhalin areas, the Jewish and the Chukchi autonomous regions. High level of *syphilis morbidity* was marked in Amurskaya area and the Jewish autonomous region, above average level was in the Republic of Sakha (Yakutia), in Kamchatka, Primorskiy, Khabarovsk territories and Sakhalin area; low level was only in Magadan area.

According to the results of primary morbidity analysis of 18 classes of diseases and 6 kinds of socially significant diseases rating of constituents of the FEFD was made (Tab. 6).

From the table it is clearly seen that in the all-Russian situation Khabarovsk territory, the Jewish autonomous region and Kamchatka territory had optimal positions - they had less morbidity of high and above average levels of those or other classes of diseases. Worse situation was in the Chukchi autonomous region, the Republic of Sakha (Yakutia) and Sakhalin area.

Primary physical inability. Situation on primary physical inability of children aged from 0 till 17 years was the following (Tab.7). According to the Russian federal 2009 statistics this parameter in the Russian Federation was equal to 190.1 per 10000 children of corresponding age. The worst position on this parameter was observed in the Republic of Sakha (Yakutia) (250.1 per 10 000) and the Jewish autonomous region (203.5 per 10 000). The best position was in Magadan area where such parameter as time of recognition for the first time of children's inability was equaled to 122.4 accordingly.

The conclusion. Thus, the comparative analysis of the main parameters describing public health (medico-demographic situation, morbidity, physical inability) regardless of incompleteness of the studied parameters gave the certain picture of health state of the population in the constituents of the Far East federal district. Unfortunately, except for common fact of rather favorable medico-demographic situation in the Republic of Sakha (Yakutia) comparing to other constituents of the FEFD, at many other parameters such as morbidity of the population including socially significant ones, position of the republic was unsatisfactory.

In our opinion, such analysis made on the basis of official statistical data, reflecting the main parameters of health in all regions of the country, gives more objective characteristic of the state of population health both in federal districts and in separate constituents of the Russian Federation.

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Table 1

Medico-demographic Parameters in the Far East Federal District (FEFD) in 2010

	Birth rate	Death rate	Natural increase
The Russian Federation	**12.5**	**14.2**	**-1.7**
The Republic of Sakha (Yakutia)	**16.8**	**9.8**	**7.0**
Kamchatka territory	12.1	12.6	-0.5
Primorskiy territory	11.8	14.3	-2.5
Khabarovsk territory	12.9	14.6	-1.7
Amurskaya area	13.8	15.3	-1.5
Magadan area	11.5	13.0	-1.5
Sakhalin area	12.1	14.9	-2.8
The Jewish autonomous region	13.6	15.5	-1.9
The Chukchi autonomous region	14.7	13.8	0.9

Table 2

Infantile Death Rate in FEFD in 2010 (per 1000 born alive)

	Infantile Death
The Russian Federation	**7.5**
The Republic of Sakha (Yakutia)	**7.2**
Kamchatka territory	9.4
Primorskiy territory	9.6
Khabarovsk territory	10.5
Amurskaya area	12.8
Magadan area	9.3
Sakhalin area	5.9
The Jewish autonomous region	10.4
The Chukchi autonomous region	21.8

Table 3

Mortality Rate Coefficients of the MainClasses of Death Reasons in FEFDin 2010 (per100 000 population)

	Infectious and Parasitogenic diseases	Tumors	Circulatory system diseases	Respiratory system diseases	Digestive system diseases	External reasons
The Russian Federation	**23.7**	**204.4**	**811.7**	**52.7**	**64.8**	**152.8**
The RS (Yakutia)	**11.5**	**120.3**	**473.9**	**35.2**	**56.2**	**197.2**
Kamchatka territory	20.2	174.4	638.1	37.4	54.9	142.0
Primorskiy territory	40.6	210.1	776.1	66.0	79.7	170.4
Khabarovsk territory	31.6	194.4	796.8	55.3	77.4	202.3
Amurskaya area	41.6	171.1	788.2	67.0	70.5	231.3
Magadan area	16.1	185.4	588.5	76.3	78.1	191.0
Sakhalin area	20.8	211.0	708.8	63.6	114.7	252.1
The Jewish aut. region	64.9	182.1	789.6	58.9	95.7	230.8
The Chukchi aut. region	35.0	144.1	633.9	57.6	78.2	349.9

Table 4

Standardized Mortality Rate Coefficients of the Main Classes of Death Reasons in the Russian Federation in 2010 (per 100 000 population)

	Infectious and Parasitogenic diseases	Tumors	Circulatory system diseases	Respiratory system diseases	Digestive system diseases	External reasons
The Russian Federation	**21.8**	**178.5**	**683.8**	**45.8**	**58.0**	**139.7**
The RS (Yakutia)	**12.3**	**173.1**	**732.6**	**49.4**	**65.3**	**191.9**
Kamchatka territory	18.0	201.3	893.1	43.0	59.2	128.6
Primorskiy territory	37.8	198.1	787.2	63.0	74.6	154.7
Khabarovsk territory	30.1	193.9	851.5	55.3	75.9	190.7
Amurskaya area	39.8	176.2	879.0	68.0	70.3	218.2
Magadan area	15.4	217.0	797.0	83.7	83.6	166.5
Sakhalin area	18.9	221.8	853.7	61.2	109.2	220.6
The Jewish aut. region	64.4	194.4	891.9	62.6	98.5	224.1
The Chukchi aut. region	45.7	270.4	1276.7	71.5	96.4	328.5

Table 5

Life Expectancy in FEFDin 2009

	Total (Both Sexes)	**Men**	**Women**
The Russian Federation	**68.67**	**62.77**	**74.67**
The RS (Yakutia)	**66.45**	**60.87**	**72.50**
Kamchatka territory	66.06	60.60	72.18
Primorskiy territory	66.72	61.11	72.66
Khabarovsk territory	66.33	60.30	72.83
Amurskaya area	64.41	58.55	70.89
Magadan area	64.06	58.50	70.07
Sakhalin area	64.83	58.63	71.76
The Jewish autonomous region	63.34	57.20	70.38
The Chukchi autonomous region	58.22	53.75	64.62

Table 6

Number of Unsatisfactory Parameters and Rating of Constituents of theFEFDaccording to Morbidity Rate (Statistics of the Russian Federation in 2010)

	High Level and Above average	**Place in Rating**
The Republic of Sakha (Yakutia)	**12**	**8**
Kamchatka territory	4	III*
Primorskiy territory	5	6
Khabarovsk territory	2	I
Amurskaya area	4	4
Magadan area	5	5*
Sakhalin area	9	7
The Jewish autonomous region	3	II
The Chukchi autonomous region	18	9

* - the place is higher due to the best additional parameters

Table 7

Physical Inability of Children Aged from 0 till 17 years (per 10 000 children's population)

	Physical Inability of Children
The Russian Federation	**190.1**
The Republic of Sakha (Yakutia)	**250.1**
Kamchatka territory	157.1
Primorskiy territory	162.6
Khabarovsk territory	184.0
Amurskaya area	194.0
Magadan area	122.4
Sakhalin area	182.4
The Jewish autonomous region	203.5
The Chukchi autonomous region	177.3