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METHODICAL APPROACHES TO ASSESSING THE AVAILABILITY OF NARCOTIC DRUGS AND PSYCHOTROPIC SUBSTANCES USED IN MEDICAL PRACTICE IN THE REPUBLIC SAKHA (YAKUTIA)

ABSTRACT

The method for assessing the accessibility of analgesic therapy at the regional level with the calculation of the accessibility index based on the integration of logically selected indicators is substantiated. At ranking the municipal districts in accordance with the degree of the generalized index of availability of narcotic drugs and psychotropic substances (ND and PS), the correlation of this index with the level of morbidity and mortality from malignant neoplasms in the regions of the republic was established. In order to assess the availability of ND and PS the nomenclature of the drugs of that group in the municipal areas classified according to the value of the accessibility index of narcotic drugs and psychotropic substances was studied.

Municipal areas with very low availability of analgesic therapy were identified. Low values of the assortment of analgesic therapy are established in these municipal districts. Their common features are geographical affiliation to the Arctic and northern regions of the republic, considerable distance from the center of the republic, low density of residence, lack of a regular land type of transport.

Keywords: assortment, drug provision, narcotic drugs and psychotropic substances, Arctic and northern regions.

INTRODUCTION

Ensuring the availability of medicines, regardless of the place of residence of a citizen, is one of the priority areas of social policy.

A comprehensive analysis of the drug supply system in the Republic of Sakha (Yakutia) has shown that the problem of organizing access to medicinal care for residents of Arctic northern ulus is especially relevant. The availability of medicines in these areas is influenced by such factors as the remoteness of most small settlements from district centers with their infrastructure, low incomes of the population, complicated and expensive transportation, increased costs for maintaining the infrastructure, and extremely low staffing with pharmaceutical personnel [1].

In the nomenclature of drugs, narcotic drugs and psychotropic substances (hereinafter - ND and PS) occupy a special place in respect of which control measures are established in accordance with the legislation of the Russian Federation and international treaties of the Russian Federation [2]. Therefore, the indicator of availability of HD and PS for use in medical practice can serve as an indicator of the definition of accessibility in the drug supply of a single region or an administrative district with remote, inaccessible settlements.

To increase the availability of support for the National Assembly and the Council of Ministers, a plan of key actions (the «road map») aimed at improving

the mechanisms for state regulation of the circulation of narcotic drugs and psychotropic medications and providing citizens with modern narcotic and psychotropic medicines for rendering assistance in inpatient and outpatient settings was approved.

One of the benchmarks for the road map is to ensure the necessary level of the range of ND and PS [3].

Materials and methods

In the analysis, the report data of pharmacy and medical organizations for 2014 - 2016, the Ministry of Health of the Republic of Sakha (Yakutia) for 2014-2016, statistical data on the demographic situation in the Republic of Sakha (Yakutia), the structure of morbidity, the results of peer review were used.

Results and discussion

To substantiate methodological approaches to assessing the accessibility of ND and PS, the following factors have been studied: a set of indicators characterizing the level of medical and medicinal assistance provided to the population, allowing to rank municipal districts into groups; the specifics of the use of the National Assembly and the Council of Europe in the provision of primary health care, specialized, including high-tech, medical care; morbidity and mortality from malignant neoplasms; assortment of used ND and PS in the context of municipal districts.

To calculate the generalized index of accessibility of ND and PS, showing the level of availability of ND and PS

for medical use, the following signs were selected logically: demographic indicators; the area of the subject of the study; number of medical personnel; number of pharmaceutical personnel; specialization and the profile of the hospital bed.

The index I, showing the level of availability of ND and PS, is defined as

$$I = \frac{\sqrt{\sum_{i=1}^n k_i}}{n}$$

the average value of the indices of the individual indicator blocks:

k_i - the indicators characterizing the above blocks of characteristics, n - the number of indicators.

Based on the developed methodology, the index of the level of accessibility of ND and PS was calculated in the context of the municipal districts of the Republic of Sakha (Yakutia) and their grouping was carried out (Table). The lowest accessibility index was found to have the Olenek district (0.005), Zhigansky district (0.005), Allayhovskiy, Anabar districts (0.00814).

Ranking of territories allows determining the similarity of municipalities in the level of accessibility of analgesic therapy for the population, which makes it possible to justify common approaches to solve existing problems, regardless of place of residence.

To analyze the factors that have a significant impact on the assortment and nomenclature of ND and PS in the municipal formations of the Republic of Sakha (Yakutia), a sociological method was chosen that focused on the collection of internal and external opinions of specialists with pharmaceutical education.

To assess the factors, the main indicators, in our opinion, influencing the availability of analgesic therapy in the republic were selected.

The selected factors were divided into 5 blocks. The first block consisted of factors characterizing the demographic indicators of the territory (area): the population, the average life expectancy. The second block consisted of factors characterizing the data on the structure of the incidence of malignant neoplasms (MN) (primary morbidity, mortality from malignant diseases). The third block included the following factors: indicators of one-year lethality, the presence of palliative departments. The fourth block consisted of such factors as: the presence in the state of the attached treatment and prophylactic institution of oncologists, the number of beds in the hospital. In the fifth block, it was suggested to bring and evaluate other significant factors in the

Ranking of territories by the level of accessibility of analgesic therapy for the population

The index determining the level of availability of HD and PS for use in medical practice	Level	Municipal districts
0,005 – 0,04	Very low level - 4 group	Allaikhovskiy, Anabarskiy, Bulunskiy, Zhiganskiy, Momskiy, Nizhnekolymskiy, Olenek, Srednekolymskiy, Ust-Yanskiy, Even-Bytantaiskiy
0,04 – 0,10	Low level - 3 group	Verkhnekolymskiy, Ust-May, Tomponskiy, Abyisk, Oymyakonskiy, Kobyayskiy, Aldan, Olekminskiy,
0,10 – 0,50	Average level - 2 group	Gorniy, Myrminskiy, Lenskiy, Nyurbinskiy, Vilyuyskiy, Neryungri, Suntar, Verkhnevilyuyi, Amginskiy, Verkhoyansk, Tattinskiy, Khangalasskiy
0,50 – 1,00	High level - 1 group	Ust-Aldanskiy, Namskiy, Churapchinskiy, Megino-Kangalasskiy, Yakutsk city district

opinion of the respondents.

The greatest impact on the availability of analgesic therapy in the Republic of Sakha (Yakutia), according to respondents, has: «primary incidence of malignant neoplasms» - 29%, «mortality from malignant neoplasms» - 22%. These factors for the sum of points, estimated by respondents in 9 and 8 points, have a leading position.

The identified on the accessibility index of the ND and PS groups of municipal districts have significant differences

in the rates of primary incidence of malignant neoplasms of the population and mortality from malignant neoplasms per 100 000 population in dynamics over the last 3 years.

In Figure, the municipal districts of the Republic of Sakha (Yakutia) on the horizontal axis are arranged in the order of group membership, starting with the smallest value. The largest values of primary morbidity and mortality from malignant neoplasms are in zone 4 of the group with a very low index value.

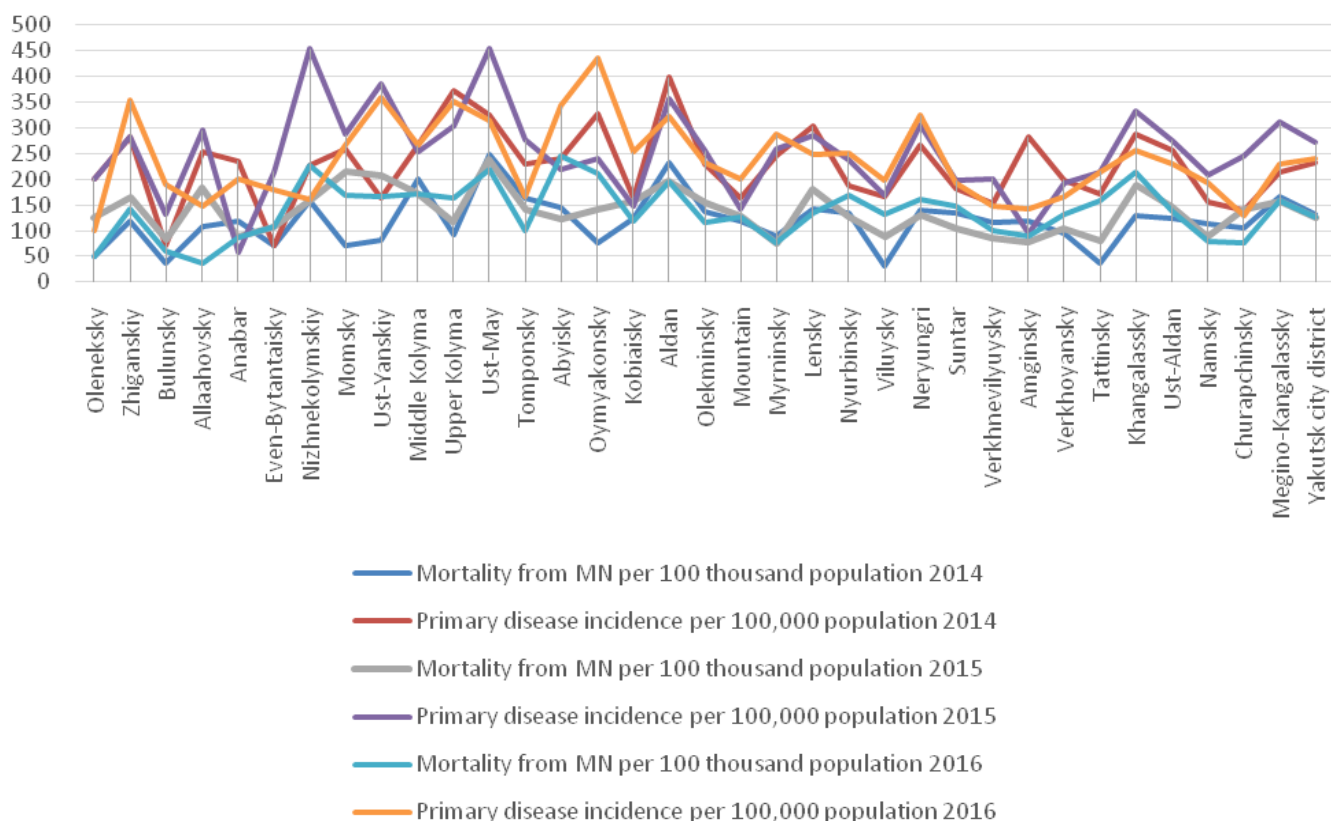


Fig. 1. Correlation of MN morbidity and mortality and availability index of the ND and PS for 2014 – 2016

In the analyzed period, the range of NSs belonging to the list II, in the republic is 66.6% of the nomenclature of registered drugs under the international non-proprietary name.

In the regions of the republic, classified as a cluster with a low level of the accessibility index of the National Assembly and the Parliament, the range of NSs for the international non-proprietary name was 55.5%, for trade names 31.6% of the nomenclature of registered drugs.

The smallest assortment of ND is represented in regions with a very low level of accessibility index of ND and PS -55.5% of the nomenclature of registered medicines in the international non-proprietary name and 26.3% in the trade name.

Analysis of the completeness of the assortment of ND and PS in medical and pharmacy organizations of the Republic of Sakha (Yakutia) showed that there are significant differences in the range of ND and PS present in the municipal districts of the republic. A number of indicators characterizing the state of the assortment of ND and PS, despite the existence of a regulatory framework in the organization of activities related to the provision of ND and PS, has a pronounced range of differences in the municipal regions of the republic. The lowest value of the indicators in the analysis of the assortment

of ND and PS was noted in the municipal districts of the republic with a very low level of accessibility index narcotic drugs and psychotropic substances.

The indicators of primary morbidity and mortality from malignant neoplasms for 2014-2016 in municipal areas classified as a group with a very low availability of narcotic drugs and psychotropic substances suggest that the current need for ND and PS is significantly higher than the actual consumption of ND and PS for the last three years.

Thus, a complex of state regulation measures is needed to equalize the availability of analgesic therapy for the population and medical organizations. The ranking of municipal districts by drug provision groups for analgesic therapy creates the conditions for the development of conceptual documents with a set of measures to increase the availability of ND and PS at the level of the subject of the Russian Federation.

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HYGIENE, SANITATION, EPIDEMIOLOGY AND MEDICAL ECOLOGY

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THE INFLUENCE OF GEOMAGNETIC STORMS ON THE DEVELOPMENT OF HYPERTENSIVE CRISES (AT THE EXAMPLE OF YAKUTSK RESIDENTS)

ABSTRACT

The data of appeal to the ambulance station with hypertensive crises of residents of Yakutsk with a geomagnetic field at the maximum (2013) and a minimum (2017) of the XXIV solar cycle was compared. It is shown that in the years of high solar activity, the effects of geomagnetic storms are manifested in the increase in the number of calls for emergency medical care with a preliminary diagnosis of the hypertensive crisis. At the same time, the majority are elderly and senile people, who, are believed, to have a cardiovascular system more susceptible to the influence of geophysical perturbations. An increase in the number of patients with hypertensive crisis is observed not only on the day of the maximum decrease of the Dst-index (the 0th day of the storm), but also in the interval from the -2th to the 2nd day of the storm. Differences in the reaction time are revealed depending on the type of geomagnetic storm: during sporadic storms, the maximum of calls is most often on the – 1st day, and for recurrent ones – on the 0th day.

Keywords: hypertensive crisis, cardiovascular diseases, geomagnetic storms, geophysical activity.

INTRODUCTION

Cardiovascular disease (hereinafter CVD) is the leading cause of the death all over the world: each year there is not another reason of death for many people but the CVD. One sort of cardiovascular

complications and decrease in the working capacity of the population is the hypertensive crisis (hereinafter HC) – inadequate and biologically inexpedient (non-adaptive) response of the organism to the action of various factors, including

environmental factors [5]. The main cause of this sort of disease, in the first place, is the state of the human body. In the modern world one can see exorbitant growth of the neuropsychological stresses, which cause a certain reaction