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Abstract.

In the current conditions of the Covid-19 pandemic, which has largely affected medical personnel, the issue of preserving their health and working capacity has become more relevant than ever. In recent years, the number of medical personnel has decreased significantly (almost by a quarter in 5 years), and the workforce has aged even more (persons of senior age make up more than 20%).

Analysis of the structure of morbidity among medical workers indicates its nature caused by stress, especially in relation to hypertension, heart attacks, strokes, neuroses, etc. Therefore, it is necessary to provide doctors with special opportunities to receive medical assistance, to create a comprehensive program for the prevention of hypertension.

Goal: The creation of a complex functional and organizational model of prevention of arterial hypertension among medical workers was to increase the quality and effectiveness of prevention of hypertension for the specified contingent, taking into account its specificities. The model is aimed at identifying and preventing risk factors for the development of hypertension and its complications. Thanks to the implementation of primary and secondary prevention measures, it is expected to mitigate the medical and social consequences of hypertension - a decrease in morbidity, mortality, disability, an increase in the average life expectancy, and an increase in the working capacity of medical personnel.

Materials and methods: The subject of the prevention of hypertension is the management of the medical institution.

The organizational and managerial function is entrusted to the management, which must supervise the organization and conduct of preventive medical examinations, ensure proper working conditions, promote the creation of an electronic register of medical personnel, and provide conditions for their recovery.

A trusted doctor (therapist) of the institution communicates directly with the staff of the medical institution, who must take care of their state of health. According to the proposed model, a trusted (therapist) doctor, who has the most complete information contained in the medical cards of the staff, creates an electronic register of doctors and nurses.

The information-analytical function of a trusted (therapist) doctor, psychologist is carried out with the participation of the information-analytical department of the institution, which helps in the development of the register of medical workers, the formation of a list of quality indicators for the analysis of the effectiveness of preventive measures.

Results: Summarizing the results of own research and data from the literature made it possible to outline conceptual approaches and promising directions for optimizing the prevention of the development of hypertension and its complications in medical workers. The basis for creating an organizational and functional model of prevention of hypertension was the following conceptual components:

Normative and legal, which provides for strict compliance with the orders of the Ministry of Health regarding preventive medical examinations of medical workers; European recommendations on the prevention of cardiovascular diseases and 2016 and the domestic unified clinical protocol of medical care "Prevention of cardiovascular diseases" of 2016.

Personnel and organizational, which provides for the presence in the medical institution of a trusted doctor (therapist), a psychologist, who must rely on the control of the health of the medical staff of the institution, the organization of preventive measures and the provision of appropriate medical assistance to medical workers if necessary.

Material and technical, which involves the creation of conditions for the implementation of preventive and curative measures (availability of relaxation rooms, provision of personnel with material assistance, sanatorium-resort treatment).

Informational and communicative, which involves informing all branches of the medical institution, and first of all, their management, about the problems of the medical staff (material, social, household, etc.) with the aim of creating proper working conditions for the medical staff, a favorable psychological microclimate.

Control and monitoring, which involves the use of indicators of the quality of the provision of medical care to assess the effectiveness of treatment and preventive measures for the prevention of hypertension in medical workers.

Conclusions: The main approaches to the prevention of arterial hypertension (or hypertensive disease) are well-known and outlined in many scientific works and guidance documents. But the general scheme of prevention of hypertensive disease needs some correction and the creation of an organizational and functional model of prevention of hypertensive disease specifically for medical workers in view of the specifics of their profession.

Key words. Hypertension, medical workers, prevention.

The state of health of medical workers has always caused concern. Morbidity levels with their growth do not reflect the real picture, because doctors, especially, are supporters of self-medication (or are treated by colleagues), due to which many cases of diseases go beyond the official statistics. According to the survey, a third of doctors in Australia, half of doctors in Spain do not have their own family doctor; 30% of doctors in Ireland have never sought medical help in the last 5 years. [Khimion].

Self-medication in these countries is common among 30-92% of doctors, which is considered unethical and even illegal by the vast majority of professional medical associations.
A trusted (therapist) doctor, whose position in a medical institution may not be provided for, at best is engaged in certifying cases of temporary incapacity of medical personnel and issuing sick leaves to them.

Doctors also do not apply for medical leave for fear of losing their jobs, so they hide the presence of pathology, perceiving their own illness as a manifestation of incompetence. Over the years of work, they develop a specific typical psychological profile of a confident doctor aiming for high life achievements, who cannot be weak and ask for outside help, burdening his colleagues.

Preventive medical examinations among medical personnel are conducted formally or not at all. There is no mention of the selection of risk groups or dispensary observation at all. According to research, only 60-85% of Canadian doctors carry out the program of preventive examinations and examinations that they recommend to their patients.

In 2019, the Ministry of Health of Ukraine launched the information campaign "The doctor has the right", which mentions the legally and constitutionally established rights of doctors, including those that directly or rather indirectly relate to his own health, the following rights: to free use of social, environmental and special medical information necessary for the performance of professional duties; for social protection; to provide household needs in rural areas. There is not a single word here about preserving the health of the doctor, let alone the average medical staff.

The main approaches to the prevention of arterial hypertension (or hypertensive disease) are well-known and outlined in many scientific works and guidance documents. But the general scheme of prevention of hypertensive disease needs some correction and the creation of an organizational and functional model of prevention of hypertensive disease specifically for medical workers in view of the specifics of their profession.

The model (Figure 1) includes subjects and objects of prevention, elements of primary and secondary prevention, forms of implementation of preventive measures, material, and technical support of preventive measures.

Subjects of prevention of hypertensive disease there are management of the medical institution (chief doctor, his deputies, heads of subdivisions), which directly control personnel activity, but also are responsible for observance of the rights of employees.

The organizational and managerial function is based on the management, which is to control the organization and conduct of preventive medical examinations, to ensure proper working conditions, to facilitate creation of electronic register of medical personnel, to provide conditions for its improvement.

A trusted hospital doctor who should care about their health is communicating directly with the staff of the medical institution. According to the proposed model, a trusted (therapist) doctor, who possesses the most complete information contained in medical cards of staff, creates an electronic register of doctors and nurses.

The informational and analytical function of the trusted (therapist) doctor, psychologist doctor is carried out with the participation of the information-analytical department of the institution, which helps in development of the register of medical workers, formation of a list of quality indicators for analysis of effectiveness of preventive measures.

It is also important to provide doctors with information on new scientific and well-grounded methods of prevention, diagnostics

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**Figure 1.** Complex functional and organizational model of prevention of arterial hypertension among medical workers.
and treatment HD, improvement of practical skills on the issues of stratification of risks of HD formation and its predations.

The institution’s psychologist (if such a post is provided) should provide psychological assistance not only to patients, but also to staff, organize individual and collective psychological sessions.

Trade unions play an important role in support of medical personnel of the institution, which should defend the right of medical personnel to preserve their own health.

The object of prevention HD - medical personnel of the institution (doctors and average medical personnel.)

The elements of primary prevention of hypertensive disease in health workers are:
- Creation of appropriate working conditions
- Conducting periodic medical reviews
- Creation of individual medical cards and electronic register of medical personnel
- Conducting individual and collective conversations on promotion of healthy lifestyle and psycho-hygiene (involving psychologist)
- Creation of conditions for staff health improvement during the working change (with the involvement of a medical gymnastics specialist)

An important component of primary prevention of HD should be the determination of the risk group of HD. To do this, you need:
- Determination of criteria for selection to the risk group
- Constant monitoring of the health status of the risk group
- Sustained self-control of arterial pressure at the workplace and at home from the risk group

The basis of the criteria for selection to the risk group is the results of the own research, which are set out in sections 3 and 4. These criteria should be excessive body mass (body mass index more than 30), age and at the same time work experience (more than 11 years), violation of circadian rhythms of arterial pressure and professional psychoemotional loading.

Lack of labor time, variable nature of work, stress, the need to make responsible decisions urgently forms a significant level of psychoemotional stress, which in turn leads to the development of the syndrome of emotional combustion and can contribute to the emergence of a hypertonic disease. A significant threshold for the prognosis of hypertensive disease is the presence of 3 and more formed symptoms of emotional combustion syndrome.

When arterial hypertension as a disease has already been formed, when diagnosis is established, secondary prevention measures should be developed to prevent acute hypertension and complications. For this purpose, the buildings have identified risk factors, formed a group of dispensary surveillance with further constant monitoring. It is proved [Tsanko] that risk factors of hypertonic crises are harmful habits, low physical activity, violation of food, professional psycho-emotional tension, violation of the regime of the day and rest, dishonor of appointments of the doctor.

The elements of secondary prevention are as follows:
- Determination of the group of patients with hypertension with the formation of a sub-group of increased risk of occurrence of acute and complications (according to the relevant criteria)
- Determination of satellite pathology and referral to specialist doctors (cardiologist, neuropathologist, etc.)
- Timely and adequate treatment according to modern clinical protocols
- Conducting rehabilitation measures (with use of sanatorium-resort treatment)
- The formation of a health stereotype with respect to working and leisure conditions, rational nutrition, moderate physical activity, etc.

The quality and effectiveness of prevention should be assessed through the development and implementation of quality and effectiveness indicators for the prevention of HD. They can be indicators of medical efficiency - frequency of first detected cases of HD, estimation of dynamics of disease with temporary disability in relation to HD, frequency of recurrence and complications from HD, as well as social efficiency - improvement of health and quality of life, satisfaction of medical service (determined by means of a survey of medical personnel).

The innovation of the proposed model consists in the individualizing approach to every medical employee of the institution, who needs primary or secondary prevention of the HD, taking into account his personal factors of risk of developing the disease or its complications.

The idea of prevention of arterial hypertension requires popularization and cohesion of the staff of the medical institution around this problem. So, at the opportunity can become campaigns under the slogan "say no conflicts in our collective", "Let's not leave alone a colleague in a state of stress!", "take on the rule: To do everyday morning gymnastics and measure arterial pressure" etc.

In addition, it should be noted that the proposed ideas on practical realization of the model of prevention of HD do not require significant economic expenses (providing a trusted doctor with a computer, equipping the fitness room or relaxation room). Moreover, in the absence of funds in the institution, the premises equipped for rest can be used in turn by patients and doctors. The situation when tired after night changes doctors and nurses are located just on the floor in the residency department is not acceptable.

Experts were experienced and highly qualified specialists in the field of health care organization (managers, scientists), who had higher qualification categories and scientific degrees according to the corresponding specialty (6 persons with the title of Doctor of Medical Sciences, 8 - candidates of medical sciences, 6 - organizers of health care, 4 - heads of clinical and diagnostic subdivisions "Theophaniya"). The average length of work of experts in health care was 26,3 years, including 18,9 years on specialty "Organization and management of health care". Experts working in the field of Public Health (3 people) were also involved, who are well aware of health assessment issues and implementation of preventive programs.

The composition of the experts provided expertise, competence, reliability, and objectivity of the evaluation. Expert assessments are presented in Table 1 and Table 2.
The highest assessment of experts has received the individualizing approach of the model of prevention of HD - 8,81±0,2 points. According to experts' conclusions, the proposed model is in line with the principles of complexity and system (8,48±0,2 and 8,59±0,2 points respectively).

The significance of the underlying model of efficiency and economic expediency is estimated somewhat lower (7,78±0,3 and 8,44±0,2 points respectively). The lowest score was an assessment of the feasibility of implementing this model in view of the realities of today related to the difficult socio-economic situation in the country and the world caused by the pandemic at Covid- 19 (total 5,11±0,2 points).

The importance of compliance with modern international experience is also highly appreciated (8,26±0,2). According to experts, it is expedient to propose a clear algorithm of calculation of risks of HD development for each medical employee considering its peculiarities. In general, the model was approved by a group of experts and estimated at 7,65±0,1 point.

Regarding changes in certain indicators as a result of the introduction of the model in practice it is necessary to note that experts are most sensitive to positive changes "frequency of complications from HD" and "effectiveness of preventive measures of secondary prevention" (8,15±0,2 and 8,44±0,2 points respectively). Unfortunately, the indicators "level of primary morbidity on HD" and "effectiveness of preventive measures of primary prevention" (5,89±0,3 and 5,93±0,3 points respectively) are expected to improve with less enthusiasm. There should be no significant changes in the quality of medical examinations and the economic performance of preventive measures (these indicators were estimated by experts at 5,22±0,3 and 4,93±0,3 points respectively), since these tasks are not priority in the country as a whole.

A possible increase in the level of awareness of health workers is estimated at 6,56±0,2 points, given that this is a special category of population, which is quite familiar with health issues.

The low expectations of increasing stress levels of health workers (only 4,33±0,3 points) can be explained by the complexity of inter-personal relationships in different aspects of communication (in the circle of health workers, between medical staff and patients and their families) in the context of the complex epidemic and social situation in the medical sector and the state as a whole.

The analysis of the implementation of a complex functional and organizational model for the prevention of arterial hypertension among medical workers continued during 2020, which turned out to be difficult and somewhat uninformative for evaluating the effectiveness of the model (increasing the burden on medical personnel in connection with the Covid19 pandemic, an increased level of general morbidity, aggravation of social problems in society). But it was this situation that prompted doctors to pay attention to their own health, and managers of institutions to take care of their own personnel. To evaluate the effectiveness of the implemented model, an observation group of 78 respondents was created - medical workers of the "Feofania" State Medical Center from HD, who passed a questionnaire survey at the end of the year. The questionnaire consisted of 20 questions, the analysis of the answers to which gives an idea of the medical and social effectiveness of the proposed model.

It was established that 87.18±3.8% of the surveyed medical workers follow the rule of measuring blood pressure at least twice a day, 67.95±5.3% of the respondents indicated that the treatment scheme has changed, including after consultation with a cardiologist (53.85±5.6%). Unfortunately, a third of medical workers with HD continue to self-medicate (29.49±5.2%). Half of the respondents were undecided about the answer to the question "Has your blood pressure stabilized?". 44.87±5.6% of medical workers used the advice of doctors of other specialties (regarding additional examinations, diet, treatment, etc.), whom they visited for consultation. 61.54±5.5% of medical workers underwent additional examinations, mostly cardiology, ultrasound examination of the heart, examination of blood vessels. In general, 96.15±2.2% of the respondents pointed to the improvement of the quality of dispensation of patients with HD of medical workers, probably because of that only 15.38±4.9% had a hypertensive crisis during the year (no more than one). 100% of respondents indicated that during the year they were ill with diseases other than HD (mostly acute respiratory diseases, diseases of the gastrointestinal tract, etc.).
musculoskeletal system), but only in a third of cases they contacted a trusted (therapist) doctor. From the analysis of the results of the survey, it became clear that the medical staff who are sick with HD do not very actively use the facilities of their institution to receive physical procedures, visit the swimming pool, etc. at the place of work, referring to the lack of time or remoteness of these locations. Only 25.6±4.9% of doctors and nurses revised their physical activity in favor of increasing it, a quarter of respondents improved working conditions (improved ergonomics and workplace lighting). Unfortunately, only 10.26±3.4% of respondents visited a psychologist, and none participated in collective psychological training, which indicates a lack of awareness of the need to take care of one's own psychological hygiene. Although half of the respondents noted that the psychological microclimate in the institution has improved. All interviewees are personally satisfied with the quality of medical care in their institution, in general, 78.2±4.6% felt positive changes from the introduction of the model.

Summarizing, it should be noted that the implementation of the proposed model is quite possible in the conditions of one individual medical institution. Yes, of course, the DUS (on the basis of which the model was tested) is rather an exception, that is, it is not a typical, and therefore an indicative institution. One should not wait for the appearance of a fitness hall with a swimming pool in the central district hospital, as the medical reform is ongoing and there will be significant structural and functional changes in health care as a system [1-7].

The distribution of work directions and functional relationships between the structural elements of the model ensures the systematicity and complexity of the developed preventive program for combating arterial hypertension in medical workers.

Implementation of this model of HD prevention in practice takes place at the level of a separate medical institution, but it is universal and can be used in any medical institution.

The proposed model of HD prevention among medical workers was positively evaluated by experts (7.65±0.1 points) and by the objects of prevention themselves - medical workers (78.2±4.6% of respondents).

The obtained results substantiate the expediency of implementing an individualized approach in the assessment of risk factors for the occurrence of HD and its complications in medical workers.

The results of the study allow us to state that the participation of a medical psychologist in programs for the prevention of arterial hypertension among medical workers is extremely important.

REFERENCES
5. Resolution of the Cabinet of Ministers of Ukraine "On approval of the list of professions, industries and organizations whose employees are subject to mandatory preventive medical examinations, the procedure for conducting these examinations and issuing personal medical books" dated 05.23.2001 No. 559.
6. Order of the Ministry of Health "Regarding the organization of mandatory preventive medical examinations of employees of certain professions, industries and organizations whose activities are related to public service and may lead to the spread of infectious diseases" dated 07.23.2002 No. 280.
პერსონალის ელექტრონული რეესტრის შექმნა და უზრუნველყოფა ხდება სამედიკონტომში, რომლის უფლებით უზრუნველყოფა საშუალო და პროფესიული პერსონალის ოთახებში, რომელთა უფლება იარსებს სამედიკონტომის პირობებით. დაწესებულების უფლებამოსილი ექიმი უშუალოდ ურთიერთობს სამედიკონტომთან, რომელმაც უნდა იზრუნოს მათ მონიტორირება. შემოთავაზებული ბოლოს მონაწილე, მისამსახურებლად უზრუნველყოფა, რომლის უფლებმა უზრუნველყოფს პერსონალთან, რომელთა მოდელი ხდება სურვილით ხელით შესაძლო. პერსონალის ელექტრონული კურსების შექმნა და უზრუნველყოფა ხდება სამედიკონტომში, რომლის უფლებამოსილი ექიმი უშუალოდ ურთიერთობს სამედიკონტომის პერსონალთან. შემოთავაზებული მოდელი მიხედვით, უფლებამოსილი ექიმი, რომელიც აქვს პერსონალის სამედიკონტომში ყველაზე სრული ინფორმაცია, ქმნის ექიმებისა და ექთნების ელექტრონულ რეესტრს.

პანდია ექიმთა ფსიქოლოგიური როლი უზრუნველყოფა სამედიკონტომის სამედიკონტომების პერსონალთან, რომლებმაც უნდა უზრუნველყოფნის აღნიშნავენ პერსონალის სამედიკონტომის ურთიერთობა. სანტომში ექიმთა ფსიქოლოგირენი იქმნის ადამიანებისთვის სამედიკონტომების მონაწილეობით. სანტომში ექიმთა ფსიქოლოგირენი იქმნის ადამიანებისთვის სამედიკონტომების მონაწილეობით.

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