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Memory of
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ABSTRACT BOOK

SCIENTIFIC AND PRACTICAL CONFERENCE WITH INTERNATIONAL PARTICIPATION DEDICATED TO THE WORLD HEALTH DAY 2024 «MY HEALTH, MY RIGHT»

863 

Modern educational needs of specialists in the public health system

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ABSTRACT

Aim: Studying the opinion of public health system workers (employees) regarding existing educational problems and needs in the context of continuous professional development.

Materials and Methods: Bibliosemantic, medical-statistical, sociological methods are used in the study. The research program provided for conducting sociological surveys of public health specialists in different regions of the country regarding the establishment of priority training topics for public health specialists; preferred methods of learning; barriers to access to education, etc. The scientific base of the research the regional centers for disease control and prevention have become. Statistical processing and mathematical analysis of materials was carried out using methods of statistical analysis.

Results: The research has found that the priority topics of training for public health specialists are issues of epidemiology (which were indicated as very important by 67.7±3.7 and as important by 22.0±3.2 per 100 respondents); emergency and disaster management (67.7±3.7 and 31.1±3.6 per 100 respondents), quality and safety (53.0±3.9 and 38.4±3.8), practices based on evidence (42.1±3.9 and 45.7±3.9) eHealth and digitalization (40.2±3.8 and 38.4±3.8), statistics (38.4±3.8 and 51.2±3.9), research methodology (32.9±3.7 and 51.2±3.9) and research ethics (12.8±2.6 and 67.7±3.7, respectively). Webinars (62.2±3.8 per 100 respondents) and online training (60.4±3.8), classroom (42.1±3.9) and hybrid (40.2±3.8) were identified as preferred forms of teaching. The obstacles to the continuous professional development of public health specialists are a lack of time and a lack of finances, a lack of information about desired training programs, their regulations, insufficient support from management, military aggression and the problems caused by it, etc.

Conclusions: The priority topics of training for public health specialists, preferred methods of training and barriers to access to training determined in the course of the study are the basis for improving the organization of continuous professional development of employees of public health centers.

KEY WORDS: public health system, public health professionals, educational aspects, continuous professional development, priority topics of study, forms of study, obstacles

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INTRODUCTION

There is a growing awareness of their unique role in solving many complex health care problems, with the development of public health systems in the world. The history of successes and achievements in the field of combating public health challenges is inextricably linked to the work of public health services. They ensure the performance of the main operational functions of public health and the provision of basic public health services, specifically: assessment and monitoring of population health; research, diagnosis and elimination of health hazards and root causes; effective communication for informing and training; strengthening, support and mobilization of communities and partnerships; creating, advocating and implementing policies, plans and laws; use of legal and regulatory measures; ensuring fair access; creating a diverse and qualified

workforce; improvement and innovation through evaluation, research and quality improvement; creation and support of a powerful organizational infrastructure of public health [1].

Achieving the ambitious Sustainable Development Goals, which involve overcoming poverty; good health and well-being; provision of clean water and sewage; decent work and economic growth; reducing inequality; sustainable development of cities and communities; climate change mitigation, etc., requires strong communities, cross-industry, cross-sectoral linkages, strong health systems and strong public health services [2].

In a number of documents of the WHO it is, that the WHO Regional Committee for Europe, and other international institutions, the special importance of public health human resources in the directions of their development is emphasized. Thus, one of the priorities of the

“Health 2020” policy is the strengthening of health care systems oriented to the needs of people, the potential of public health care and preparedness for emergency situations [3]. The thirteenth general program of work 2019–2023 (GPW13) “Promoting health, maintaining security in the world, reaching vulnerable population groups with services” indicates the priority of the issue of human resources for health care, which includes public health personnel [4].

The policy document «Achieving progress in the field of public health in the WHO Regional Committee for Europe for sustainable development», which was approved by the 68th session of the WHO Regional Committee for Europe in 2018, indicated the need to allocate the necessary resources to strengthen the capacity of the structures involved in public health, within the health care system, and in other sectors involved; investing in training and continuous professional development of health care personnel to create a personnel base for health care systems and for other involved policy sectors [5].

The Thirteenth European Programme of Work «United Action for Better Health in Europe’ for 2020-2025» envisages strengthening national, regional, and global capacity to ensure more effective protection of people from epidemics and other health emergencies and to ensure that populations affected by emergencies have rapid access to essential health services that save lives and provide health promotion and disease prevention [6].

The strategic goals of the World Federation of Public Health Associations (WFPHA) for 2023-2027 include the development of public health practice, education, training and research [7]. The European Public Health Association (EUPHA) is focused on preparing future generations of public health professionals for their leadership roles in public health [8].

WHO and other international organizations in health care emphasize the need to improve policies on the development of public health human resources and create conditions for the effective work of specialists who provide public health services.

The issue of improving the provision of public health services is extremely relevant for Ukraine in view of the epidemiological context, the significant need of the population for such services, existing problems and reorganizational changes in the health care system.

Considering the existing and potentially possible challenges and threats to public health, improving training and ensuring continuous professional development of public health personnel is an important task of the national health care system.

Determining directions and ways to improve the formation of public health personnel potential requires,

among other things, studying the opinion of public health service providers regarding existing educational problems and ways to solve them. This necessitates the justification and development of appropriate tools and conducting sociological surveys among public health specialists.

AIM

To study the opinion of public health system workers regarding existing educational problems and needs in the context of continuous professional development.

MATERIALS AND METHODS

The research uses a systemic approach, bibliosemantic, medical-statistical, sociological methods.

The research program provided for the adaptation of the toolkit, which was developed as part of the EU Erasmus+ Program project, for its use in Ukraine and conducting sociological surveys of public health specialists in different regions of the country. The survey was anonymous. The specific objectives of the survey included establishing priority training topics for public health professionals and other health care professionals; preferred methods of learning; barriers to access to education, etc.

The scientific basis of the study was the disease control and prevention centers of Kyiv, Zhytomyr, Poltava, and Chernihiv regions. The sample size included 164 respondents. Statistical processing and mathematical analysis of anonymous sociological research materials was carried out using methods of statistical analysis.

RESULTS

According to the results of a sociological survey of specialists of disease control and prevention centers, it was found that the priority topics for training for public health specialists and other specialists in the field of health care are epidemiology, emergency and disaster management, quality and safety, evidence-based practice, eHealth and digitization (digitalization). Thus, 67.7 ± 3.7 per 100 respondents indicated that training in epidemiology was determined to be very important; 22.0 ± 3.2 per 100 people – important; and only 3.7 ± 1.5 per 100 respondents – not important (Table 1). As a very important and important topic of training, the employees of public health centers identified the topic of emergency and disaster management with the corresponding indicators of 67.7 ± 3.7 and 31.1 ± 3.6 per 100 respondents.

Table 1. Priority topics of training for public health specialists and other specialists in the field of health care

Topics	Very important		Important		Not important	
	abs.	for 100 persons, 95% CI	abs.	for 100 persons, 95% CI	abs.	for 100 persons, 95% CI
Epidemiology	111	67,7±3,7 (60,3-75,1)	36	22,0±3,2 (15,6-28,4)	6	3,7±1,5 (0,7-4,5)
Emergency and disaster management	111	67,7±3,7 (60,3-75,1)	51	31,1±3,6 (23,9-38,3)	0	
Quality and safety	87	53,0±3,9 (45,2-60,8)	63	38,4±3,8 (27,2-30,8)	0	
Evidence-based practice	69	42,1±3,9 (34,3-49,9)	75	45,7±3,9 (37,9-53,5)	3	1,8±1,0 (-0,2-3,8)
eHealth and digitization (digitalization)	66	40,2±3,8 (32,6-47,8)	63	38,4±3,8 (27,2-30,8)	0	
Statistics	63	38,4±3,8 (27,2-30,8)	84	51,2±3,9 (43,4-59,0)	9	5,5±1,8 (1,9-9,1)
Research methods	54	32,9±3,7 (25,5-40,3)	84	51,2±3,9 (43,4-59,0)	9	5,5±1,8 (1,9-9,1)
Research ethics	21	12,8±2,6 (7,6-18,0)	111	67,7±3,7 (60,3-75,1)	18	11,0±2,4 (6,2-15,8)
Global health	15	9,1±2,2 (4,7-13,5)	48	29,3±3,6 (22,1-36,5)	8	4,9±1,7 (1,5-8,3)
Other	96	58,5±3,8 (50,9-55,1)	12	7,3±2,0 (3,3-11,3)	0	-

The demand for quality and safety topics, which were highly rated by 53.0±3.9 per 100 respondents and highly – 38.4±3.8 per 100 respondents, respectively, as well as the topic regarding evidence-based practice (42,1±3.9 and 45.7±3.9 per 100 respondents) and topics related to eHealth and digitization (digitalization), which was very highly rated by 40.2±3.8 and highly – 38.4±3.8 per 100 interviewed. Above all, the topics of statistics and research methods, research ethics, and global health were prioritized as high (Fig. 1).

Among the topics that were less often identified as important were immunoprophylaxis (7.3±2.0 per 100 respondents), ethical norms in public health, communication, and occupational hygiene.

Only some respondents indicated the priority of the topic regarding the impact of environmental factors on health; informatization and modern technologies; intersectoral interaction in the implementation of programs; communications in the public health system; development of leadership competencies; ethical norms in public health; legal aspects in public health; ecology, state policy and legal foundations in public health; monitoring measures to strengthen the health of the population in the regions; prevention of non-infectious diseases; infection control, antibiotic resistance, medical waste management; sanitary protection of the territory; infectious diseases, public health management; health risk assessments; unified health, etc.

Among the various methods of training, public health specialists preferred webinars (62.2±3.8 per 100 respondents), online training (60.4±3.8 per 100 respondents), classroom (face-to-face) training (42.1± 3.9 per 100 respondents) or hybrid (full-time-correspondence) education (40.2±3.8 per 100 respondents) (Fig.2).

Other forms of training, such as trainings, academic mobility, practical online training, internships, self-education, independent work, video lectures, training in groups, master classes; round tables, scientific and practical conferences, exchange of experience between disease control and prevention centers, the Public Health Center of the Ministry of Health of Ukraine were identified as desirable by a total of 23.8±3.3 per 100 respondents.

The main barriers to access to education were identified by public health specialists as a lack of time (60.4±3.8 per 100 respondents), a lack of finances (56.7±3.8 per 100 respondents), a lack of an appropriate training program (42,1±3.9 per 100 respondents), a lack of training regulations (32.9±3.7 per 100 respondents), a lack of motivation (22.0±3.2 per 100 respondents), a lack of management support (14.6±2.8 per 100 respondents), a lack of an appropriate training program in the national language (5.5±1.8 per 100 respondents) (Fig. 3). A lack of specialists was indicated as significant barriers; ignorance of the legislative framework that regulates activity and the presence of an accredited

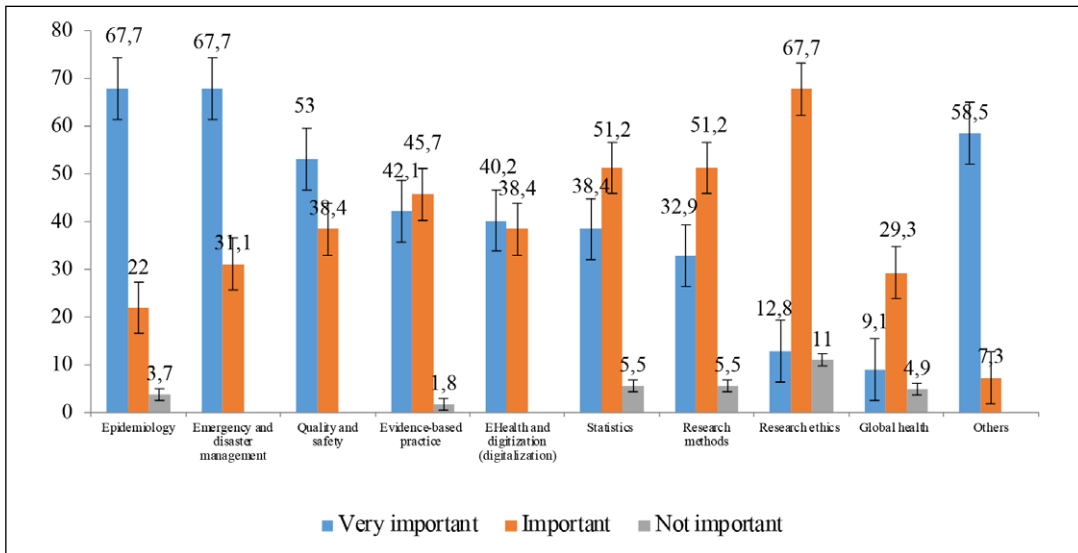


Fig. 1. Priority topics of training for public health specialists and other specialists in the field of health care (per 100 respondents).

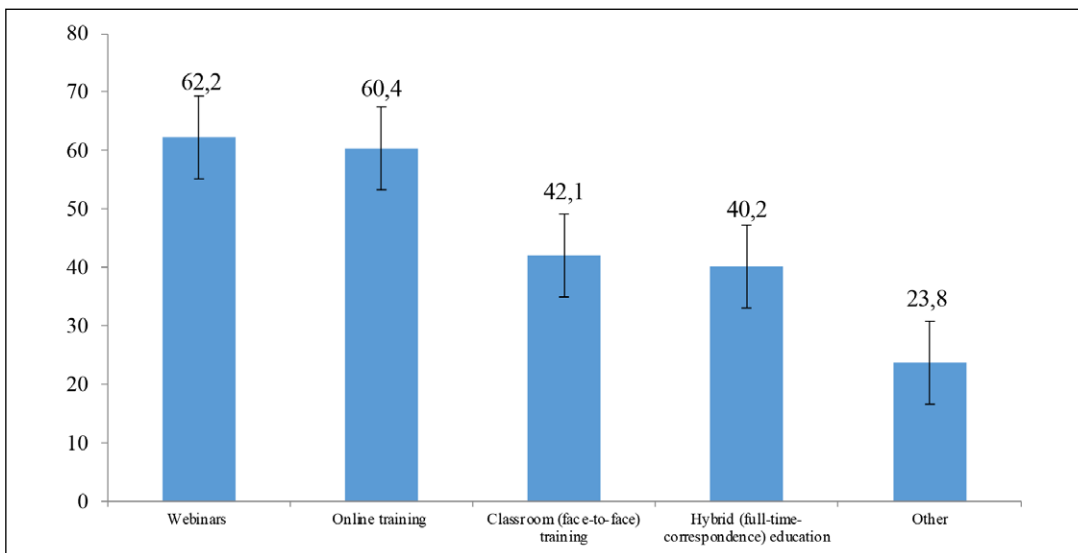


Fig. 2. Preferred methods of training for public health specialists and other specialists in the field of health care (per 100 respondents).

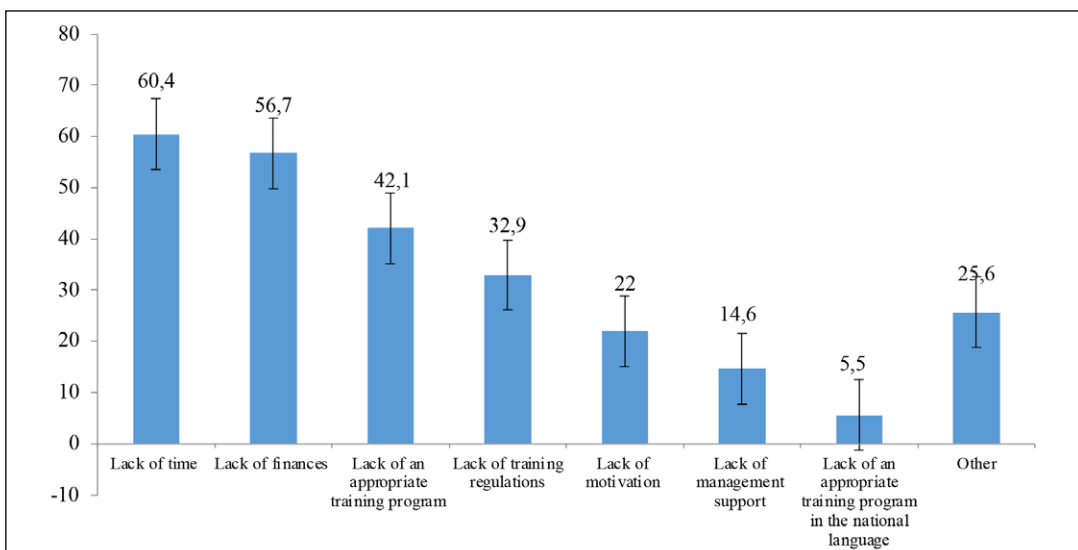


Fig.3. The barriers to access to training of public health specialists and other specialists in the field of health care (per 100 respondents).

educational and professional program in local institutions of higher education; military aggression and interruptions in the supply of electricity, the Internet, and communications caused by it; a lack of free access to modern scientific literature; psychological state, etc.

DISCUSSION

Considering the importance of providing the public health system with human resources of the appropriate number and quality, the conducted research on the opinion of public health system employees regarding the existing educational problems and needs in the context of continuous professional development is of significant scientific and practical importance. Its results make it possible to determine the priorities of the thematic improvement of the qualifications of public health service employees and to formulate measures for the implementation of the identified priorities.

This approach is fully consistent with the Resolution of the WHO „Human resources of health care. Global strategy for the development of human resources for health care ‘Labor Resources-2030’” [9]. It emphasizes the importance of competence-oriented education. Expanding and strengthening this approach is one of the priority tasks in all the WHO regions. In order to facilitate the expansion of the scope of this activity and to determine the priority professional qualities, a global system of assessment of professional qualities and results was developed to ensure universal coverage of health care services, which will be used to develop training programs in the WHO member states [10].

The Bucharest Declaration on Health and Social Workforce indicated that national health systems face insufficient investment in skills development to meet the evolving need for health professionals and emphasized the need to strengthen continuous professional development by adapting relevant standards and methodologies, encouraging leadership development and providing lifelong learning opportunities [11].

The priority topics identified during the research, on which public health specialists want to improve their qualifications, are extremely relevant in view of the current context of problems in this field [12,13].

It is quite predictable that the priority in the topic is given to issues of epidemiology and statistics, which are the basis of the formation of many special competencies of public health specialists. The priority of issues of emergency and disaster management is determined by modern realities in the field of public health, the tendency to increase the frequency of emergency situations at the global and regional level, and the difficulty of eliminating their negative consequences for

the health of the population. It is with this in mind that the WHO benchmarks for strengthening health capacity in emergencies through scaling up the Public Health and Social Measures (PHSM) have been updated. The document is aimed at supporting and implementing the International Health Regulations and the potential for preventing emergencies in the field of health care, preparedness, response, and resilience [14]. Issues of emergency and disaster management are extremely relevant for Ukraine, given the military aggression the country is experiencing and its medical and social consequences.

The topic of electronic health and digitalization of health care turned out to be in demand by public health specialists, given the widespread use of electronic and digital technologies in health care and public health in particular. This fully corresponds to the Global Strategy on Digital Health 2020-2025 [15] and is consistent with the provisions of the Bucharest Declaration on the health and care workforce [11], which emphasizes the need to expand the justified use of digital tools to provide more effective, efficient, and accessible services.

The priority of evidence-based practice issues in the educational needs of public health professionals is due to the demand for the best available evidence for safe and effective health care policies and programs [16].

The importance of studying issues related to research methods and research ethics is explained by the growing requirements for methodology and ethical aspects of conducting research in public health. The identification of global health issues as an important topic of study is due to the active processes of globalization in various spheres of economy and social life, which affect the health of the population and need to be taken into account when developing preventive measures and response measures.

As for another topic that the employees of the disease control and prevention centers rarely identified as a priority for training, in particular, the impact of environmental factors on health; intersectoral interaction in the implementation of programs; communications in the public health system; development of leadership competencies; legal aspects in public health; ecology, state policy and legal foundations in public health; monitoring measures to strengthen the health of the population in the regions; prevention of non-infectious diseases; infection control, antibiotic resistance, medical waste management; sanitary protection of the territory; infectious diseases, public health management; health risk assessments; unified health, etc., then this may be due to realized opportunities for professional development.

Giving absolute preference to webinars and online

training, which was expressed by more than half of the respondents, may be related to the desire to improve their qualifications without leaving the workplace. At the same time, there is a significant need for classroom (face-to-face) and hybrid (face-to-face) training, as confirmed by more than 40 out of 100 interviewed specialists. The lower demand for other forms of education, in particular trainings, internships, self-education, round tables, scientific and practical conferences, etc., can be explained by the unsuccessful previous experience of using such forms of continuous education, which indicates the need to improve their organization.

The important result of the study was the clarification of existing obstacles to the continuous professional development of public health specialists, which are, first of all, a lack of time and a lack of finances. This indicates the need to develop such forms of training that are the least time-consuming and financially inexpensive. A serious obstacle in obtaining the necessary training and improving qualifications is military aggression and interruptions in the supply of electricity, the Internet, and other types of communication caused by it.

The promising and long-term way to overcome existing obstacles in the way of continuous training of the staff of disease control and prevention centers is to provide broad information about existing training programs, training regulations, and to take measures to increase the motivation of specialists and support from the administration. The survey shows that there is a need to adapt foreign language programs of continuous professional development of public health specialists, to increase the availability of special educational literature, and to improve the conditions for lifelong learning.

CONCLUSIONS

The medical and social research has established priority topics of training for public health professionals, preferred methods of training and barriers to access to training. It was found that among the subjects of lifelong learning, employees of the Centers for Disease Control and Prevention consider issues of epidemiology, emergency and disaster management, quality and safety, evidence-based practice, eHealth and digitization (digitalization) to be priorities. According to respondents, issues of statistics, research methodology, research ethics, and global health are also important. The chosen topic of study is the basis for the formation and improvement of many competencies of public health specialists. At the same time, less interest in another topic may indicate confidence in one's own existing knowledge and skills, better access to their acquisition, etc.



Based on the results of the study, the desired forms of continuous professional development, primarily webinars and online training, were identified, which indicates the desire to learn without leaving work. A little less than half of the respondents confirmed the need for classroom and hybrid education.

The obstacles to the continuous professional development of public health specialists have been identified, which are, first of all, a lack of time and a lack of finances, a lack of information about the desired training programs, their regulations, insufficient management support, military aggression and the problems caused by it, etc.

The priority topics of training for public health specialists, preferred methods of training and barriers to access to training determined during the study are the basis for improving the organization of continuous professional development of public health centers employees.

REFERENCES

1. Coombe L, Severinsen C, Robinson P. Practical competencies for public health education: a global analysis. *Int J Public Health*. 2020;65(7):1159-1167. doi:10.1007/s00038-020-01459-3. [DOI](#)
2. Transforming our world: the 2030 Agenda for Sustainable Development. <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> [Accessed 6 January 2024]
3. Health 2020: a European policy framework supporting action across government and society for health and well-being. Copenhagen: WHO EURO. 2013, p.22. https://www.salute.gov.it/imgs/C_17_pubblicazioni_1819_ulterioriallegati_ulterioreallegato_0_alleg.pdf [Accessed 6 January 2024]
4. Thirteenth general programme of work 2019–2023: remote health, keep the world safe, serve the vulnerable. Geneva: WHO. 2019, p.60. <https://www.who.int/publications/i/item/thirteenth-general-programme-of-work-2019-2023> [Accessed 8 January 2024]
5. Sixty-eighth Regional Committee for Europe: Rome, 17–20 September 2018: resolution: advancing public health for sustainable development in the WHO European Region. Copenhagen: WHO EURO. 2018. <https://iris.who.int/handle/10665/339107> [Accessed 8 January 2024]
6. European Programme of Work, 2020–2025: United Action for Better Health. Copenhagen: WHO EURO. 2021, p.56. <https://iris.who.int/bitstream/handle/10665/339209/WHO-EURO-2021-1919-41670-56993-eng.pdf?sequence=1> [Accessed 8 January 2024]
7. WFPHA's Strategic plan for 2023-2027. <https://www.wfpfa.org/mission/#:~:text=To%20tackle%20these%20complex%20challenges,wellbeing%22%2C%20and%20renewed%20goals.> [Accessed 8 January 2024]

8. EUPHA Strategy 2020–2025: Analysis, Advocacy, Action. <https://eupha.org/2020-2025> [Accessed 9 January 2024]
9. Human resources for health. Global strategy on human resources for health: workforce 2030. Seventy-fifth world health assembly, 12 April 2022. Geneva: WHO. 2022. https://apps.who.int/gb/ebwha/pdf_files/WHA75/A75_15-en.pdf [Accessed 9 January 2024]
10. WHO benchmarks for strengthening health emergency capacities. Geneva: WHO. 2023, p.400. <https://iris.who.int/bitstream/handle/10665/375815/9789240086760-eng.pdf?sequence=1> [Accessed 11 January 2024]
11. Bucharest Declaration on the health and care workforce. High-level Regional Meeting on Health and Care Workforce in Europe: time to act, 22–23 March 2023, Bucharest, Romania. Copenhagen: WHO EURO. 2023, p.4. <https://www.who.int/europe/publications/i/item/bucharest-declaration> [Accessed 11 January 2024]
12. Gruzieva TS, Hrechyshkina NV, Inshakova HV et al. Development of the public health system in the conditions of current challenges and threats. *Wiad Lek.* 2022;75(5):1129-1134. doi: 10.36740/WLek202205114. 
13. Gruzieva TS, Hrechyshkina NV, Antonyuk OYa et al. Self-assessment of the content of the public health master's educational program for compliance with the european public health core competences programme. *Wiad Lek.* 2021;74(3):713-717. doi:10.36740/WLek202103227. 
14. The updated WHO Benchmarks for Strengthening Health Emergency Capacities expanded to include public health and social measures (PHSM). 2024. <https://www.developmentaid.org/news-stream/post/174379/strengthening-health-emergency-capacities> [Accessed 12 January 2024]
15. Global Strategy on Digital Health 2020–2025. Geneva: WHO. 2021, p.60. <https://iris.who.int/bitstream/handle/10665/344249/9789240020924-eng.pdf> [Accessed 13 January 2024]
16. Evidence, policy, impact: WHO guide for evidence-informed decision-making. Geneva: WHO. 2021, p.53. <https://www.who.int/publications/i/item/9789240039872> [Accessed 14 January 2024]

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CONFLICT OF INTEREST


















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