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**I.M. Khomenko,
O.P. Ivakhno,
N.M. Zakharova**

WAYS OF OPTIMIZING MEDICAL SERVICES FOR CHILDREN AT EDUCATIONAL INSTITUTIONS UNDER THE HEALTH CARE SYSTEM REFORM IN UKRAINE

*Shupyk National Medical Academy of Postgraduate Education
Department Public Health
Dorohozhytska str. 9, Kyiv, 04112 Ukraine
Національна медична академія післядипломної освіти ім. П.Л. Шупика
кафедра громадського здоров'я
(зав. – проф. І.М. Хоменко)
вул. Дорогожицька, 9, Київ, 04112, Україна
e-mail: khomen2010@ukr.net*

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Ключові слова: *здоров'я дітей, медицина дитинства, післядипломна освіта медичних кадрів, компетентнісна модель*

Ключевые слова: *здоровье детей, медицина детства, последипломное образование медицинских кадров, компетентностная модель*

Abstract. *Ways of optimizing medical services for children at educational institutions under the health care system reform in Ukraine. Khomenko I.M., Ivakhno O.P., Zakharova N.M. Aim – scientific substantiation of the ways to optimize preventive childhood medicine under the health care system reform in Ukraine. The medical, sanitary and epidemiological conditions of children's stay were studied at 147 schools in five oblasts of Ukraine and the city of Kyiv. The following methods were used: system analysis, analytical, mathematical and statistical, bibliosemantic, modeling and expert assessments. The results of an expert assessment (224 specialists) on the optimization of medical services for schoolchildren were analyzed. The main risk factors for schoolchildren staying at educational institutions were identified: daily routine failure, non-compliance with the hygiene requirements for the premises where the educational process is carried out, as well as failure in food and water quality and safety. The levels of medical observation provision were analyzed. There were suggested two ways of maintaining the role of medical personnel in preserving and enhancing the health of schoolchildren: involving doctors of primary care centers of the Ministry of Health of Ukraine and creating an autonomous medical service in the institutions of the Ministry of Education and Science of Ukraine in accordance with the current licensing requirements. The issues of prevention and promotion of children's health, including schoolchildren, are one of the key aspects of the training of medical personnel at all stages. Such programs need to be modernized on the basis of a competency approach, taking into account the current needs of the health care system and the best international experience in resolving these issues.*

Реферат. *Пути оптимизации системы медицинского обслуживания детей в образовательных учреждениях в условиях реформирования системы здравоохранения Украины. Хоменко И.М., Ивахно А.П., Захарова Н.М. Цель работы – научное обоснование путей оптимизации системы профилактической медицины детства в условиях реформирования системы здравоохранения Украины. Изучены медицинские, санитарно-эпидемиологические условия пребывания детей в 147 школах пяти областей Украины и города Киева. Использовались методы: системного подхода, аналитический, математико-статистические, библиосемантический, моделирования и экспертных исследований. Проанализированы результаты экспертной оценки (224 специалиста) по оптимизации медицинского обслуживания школьников. Определены основные факторы риска рабочей зоны детей школьного возраста: нарушения режима дня школьников, не соблюдение гигиенических требований к помещениям, где осуществляется образовательный процесс, нарушения качества и безопасности пищевых продуктов и воды. Проанализированы уровни обеспечения медицинского наблюдения. Предложено два пути сохранения роли медицинских кадров в сохранении и усилении здоровья школьников: привлечение врачей центров первичной медицинской помощи Министерства здравоохранения Украины и*

формирование автономной медицинской службы в учреждениях системы Министерства образования и науки Украины, согласно действующим лицензионным требованиям. Вопросы профилактики и промоции здоровья детей, в том числе школьного возраста, – это одни из ключевых аспектов подготовки медицинских кадров на всех её этапах. Такие программы нуждаются в их модернизации на основе компетентного подхода, должны учитывать текущие потребности системы здравоохранения и наилучший мировой опыт решения указанных вопросов.

Health maintenance of children is a topical issue and a prerequisite for development of any society. The solution to this issue is impossible without proper influence on social determinants, elimination of injustice in health care of children, school age in particular [9]. The leading countries in the European Region demonstrate their willingness to address these issues first by, identifying national needs and, second, reorienting health services and creating appropriate action models for promoting child health [7, 8]. Creating healthy living conditions for children in educational institutions is regulated in the legislative field of Ukraine [3, 4, 5]. Today, however, the levels of acute and chronic diseases of school-age children continue to increase, with educational institutions reducing their staffing and/or reducing their professional competencies. Contemporary challenges, including the implementation of the principle of inclusiveness in education exacerbate the situation and require of the community and medical community in particular, the immediacy and professionalism to ensure the safest conditions for healthy development of children and adolescents, including general secondary education establishments (GSEE). A new procedure for dispensary supervision has been introduced in Ukraine [3], but it does not provide additional benefits for schools to obtain the status of a child health center and the emphasis on primary care does not solve the problem of systematic medical supervision directly in the educational establishment. Our analysis of scientific sources in the field of health protection of the child population has shown the diversity of approaches of EU countries in addressing issues of organized childhood health care [6]. One of the priority issues of the health care system for organized groups of school-age children is professional training, including at the postgraduate stage and during continuous professional development.

A comprehensive analysis and development of ways to improve and enhance the effectiveness of health care for children in GSEE, in particular, has not been conducted recently in the country, which determines the relevance of our research.

MATERIALS AND METHODS OF RESEARCH

During 2018-2019, health care and epidemiological conditions of stay of children in 147 GSEE in

five regions of Ukraine and Kyiv were studied. The data of the State Institution “Laboratory Center of the Ministry of Health of Ukraine” were used. For expert evaluation two author’s questionnaires with 15 questions in each, with possible answers were developed. The experts in the field of Pediatrics and General Practice Family Medicine (187 people) and 37 nurses/ doctor’s assistants (feldshers) of the GSEE were selected as experts. The overall average work experience of the experts was more than 10 years, which can be considered as a mediate, sufficient criterion for professionalism and the right to have an opinion on the issues of our research. The answers of the voluntary anonymous questionnaire of the mentioned group of experts were analyzed. To study the current situation of the research subject, as reflected in the scientific and regulatory documents of Ukraine and relevant publications of experts of the World Health Organization, a *bibliosemantic* method was used. *The systematic approach* was used to comprehensively evaluate the medical and sanitary-epidemiological support of a particular group of children, taking into account the current situation with regard to the statutory regulation of the research subject, considering the strategic directions of its development in terms of international experience, as well as in the aspect of training of medical personnel of relevant specialization. *Expert evaluation method* provided objective data from the best experts on possible ways to optimize the delivery of health care to children during their stay in the GSEE. *Biostatistic methods* used conventional formulas for determining derivatives (relative, mean) and the statistical significance of their difference using the standard program Exel license package Windows 10. To more effectively summarize the obtained results, a *simulation method* was used, which allowed to develop a model of possible options for optimization of medical care delivery.

RESULTS AND DISCUSSION

While staying in an educational establishment, a child may be under the influence of factors of the internal school environment for a long time, get physical and mental overload, consume poor food and so on. The analysis of the sanitary-epidemic status of educational establishments testifies to the existence of significant drawbacks. The capacity of the schools is quite high (from 330 to 2000 pupils),

which may be accompanied by an increase in psychological load and risk of traumatizing of children. Every second educational establishment does not have centralized water supply (51.9% of all establishments under study), more than 70% of establishments do not have a modern sewerage system. Children in educational establishments receive drinking water that does not meet the hygiene requirements for microbiological and chemical parameters (22.5% and 25.0%, respectively), indicating the risks of diseases of both infectious and non-infectious origin. The basic comments on the conditions of children staying in educational establishments were related to the lighting deficiency of the main premises and deterioration of the microclimate (by 29.8% and 16.4% respectively). Child nutrition needs improvement and adherence to physiological and hygienic rules. Every third (34.5%) diet does not meet physiological standards, in 14.1% of samples bacteriological contamination of ready meals and work areas in the kitchen was detected. Thus, the conditions of children staying in educational establishments can be threatening for the development of disease states and diseases.

In educational establishments unforeseen situations that could deteriorate child health may occur, some conditions may require first medical aid at least at primary level and for this purpose equipment, health commodities and trained personnel must be available. Risk factors have different sources of origin, affect the child comprehensively, depend on the sensitivity of the child's body, so the development of recommendations and ways to implement curative measures requires additional professional competencies that are not included in current training programs for doctors in the specialty "General Practice – Family Medicine" (GP-FM) and "Pediatrics". In this case interaction with health care workers of preventive medicine and/or improvement of professional training of doctors of clinical medicine is necessary [1, 2].

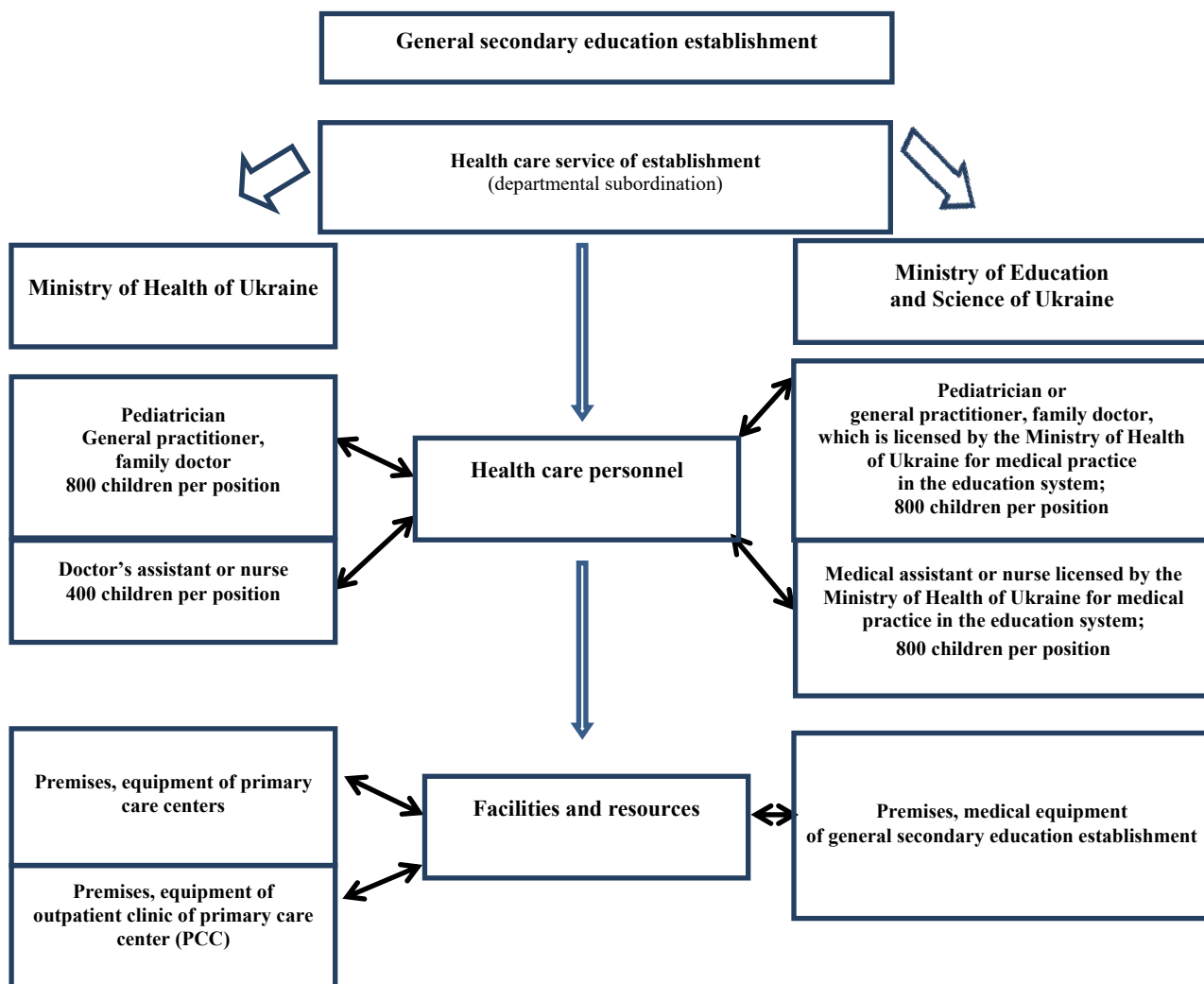
According to our data, medical care of organized groups of children is provided mainly by a nurse or doctor's assistant (53.7% of cases). More than half of educational establishments (55.8%) have appropriate medical units and equipment. Informatization of medical offices is foreseen in 40.5% of establishments, 37.8% of offices are hooked up to the Internet, 59.5% of medical workers in schools are provided with mobile communication services (at the expense of the educational establishment). Medical examinations of children and prophylactic

vaccinations are carried out in primary care centers (PCC) (62.2% of cases) and, by agreement with medical and preventive institutions – in educational establishments (29.7% of cases).

Strategic planning of activities and responsibility for the organization of medical care for children in the educational setting should be entrusted to the Ministry of Health of Ukraine, its structural units, institutions and establishments - this opinion of experts prevails over the position that these functions should be implemented under the guidance of the Ministry of Education and Science of Ukraine ($p < 0.05$).

The overwhelming majority of experts (70.3%) believe that it is advisable to deliver medical care to children with the participation of doctors from the PCC and the nurse whose workplace is in the educational establishment (Fig.).

All activities of the nurse are directed by a pediatrician, whose workplace is in the center of the PHC (outpatient clinic). He/she can also work in a team with several nurses, responsible for some educational institutions in-parallel. This option for the organization of medical care is supported by a statistically significant majority of experts ($p < 0.01$) than the option when doctor of GP-FM takes on the role of a chief of a nurse. The position of "pediatrician" who delivers school-based health care is proposed to supervise up to 800 children. 30% of the respondents supported this proposal. When implementing a scheme involving GP-FM doctors, it is necessary to limit the number of children aged 10 to 18 years to 30% of the total number of patients. The second way of organizing medical care for children directly in the GSEE is a contractual one: between the educational establishment of the Ministry of Education and Science of Ukraine and the doctor, the doctor must have an appropriate license for medical practice [4]. Such a doctor can independently determine the members of his team, both by specialty and by the level of professional education. According to experts, today it can be psychological help and improvement of the quality of nutrition of children (56.5% and 18.9% respectively). Health professionals in the GSEE should continually improve and update their professional competencies according to relevant educational programs which would take into account state of the art in health care system and the worldwide experience of organizing medical and preventive care for organized groups of children.



Ways of medical provision of general secondary education establishments depending on the departmental subordination of health care personnel

CONCLUSIONS

1. The important medical and social problem concerning the medical provision of organized groups of children in the conditions of an educational establishment is identified: low level of medical supervision as for observing the rules of sanitary-epidemic safety, contravention of the principles of optimization of the educational process, shortcomings in the organization of preventive measures.

2. The ways of optimization of the health care system for children studying in general secondary education establishments are scientifically substantiated: at the expense of the staff of PCC of Ministry of Health of Ukraine and the formation of an autonomous medical service in the system of the Ministry of Education and Science of Ukraine under the licensing requirements of the Ministry of Health of Ukraine.

3. Protection of health of organized groups of children in the current conditions of medical reform and strategic planning should be based on a flexible system of interaction between representatives of different specialties of medical and preventive direction, as well as representatives of other fields of activity (psychologists, social workers, mass media, etc.), non-governmental organizations and private sector.

4. Contemporary higher education curricula at all stages should include sections of medical, preventative provision of organized groups of children as one of the main aspects of developing a competent model for the training of healthcare professionals, be adapted to national needs and take into account world best practices.

REFERENCES

1. Hulchiy OP, Khomenko IM, Zakharova NM, Ivakhno OP, Piven NV. [Methodological approaches for efficiency improvement of the competency model for training public health experts in Ukraine]. *Wiadomosci Lerarskie*, 2018;LXXI(7):1336-41. Ukrainian.
2. [Order of the CM of Ukraine No. 674 of 21.08.2019 "On approval of the Plan of measures for the implementation of the strategy of development of medical education in Ukraine for 2019-2021"]. [Internet]. Ukrainian. Available from: <https://zakon.rada.gov.ua/laws/show/674-2019-%D1%80>.
3. [Order of the Ministry of Health of Ukraine March 19. 2018, No. 504. "On Approval of the Procedure of Provision of Primary Care". Coll. n-direct. Healthcare Documents]. [Internet]. Ukrainian. Available from: <https://zakon.rada.gov.ua/laws/show/z0348-18>
4. [Law of Ukraine "On Licensing of Economic Activities" of March 2, 2015, No. 222-VIII]. [Internet]. Available from: <https://zakon.rada.gov.ua/laws/show/222-19> Ukrainian.
5. [Law of Ukraine "On Education" 2017. September 05. No. 2145-VIII]. [Internet]. Available from: <https://zakon.rada.gov/laws/show/2145-19/> Ukrainian.
6. Jochen Ehrich, Leula Namasova-Baranova, Massimo Pettoello-Mantovani, Plumx Metrics. Introduction to "Diversity of Child Care in Europe: A. Study of the European Pediatric Association. [Internet]. Available from: <https://doi.org/10.1016/j.jpeds/2016.04.036>.
7. European Action Plan for Strengthening Public Health Capacities and Services. [Internet]. Available from: http://www.euro.who.int/__data/assets/pdf_file/0005/171770/RC62wd12rev1-Eng.pdf?ua=1
8. Health 2020 A European policy framework and strategy for the 21st century. [Internet]. Available from: http://www.euro.who.int/__data/assets/pdf_file/0011/199532/Health2020-Long.pdf?ua=1
9. Investing in children: the European child and adolescent health strategy 2015-2020. [Internet]. Available from: http://www.euro.who.int/__data/assets/pdf_file/0010/253729/64wd12e_InvestCAHstrategy_140440.pdf?ua=1.

СПИСОК ЛІТЕРАТУРИ

1. Методичні підходи до підвищення ефективності компетентнісної моделі підготовки спеціалістів з громадського здоров'я в Україні / О. П. Гульчій et al. *Wiadomosci Lerarskie*. 2018. Т. LXXI, No. 7. Р. 1336-1341.
2. Про затвердження Плану заходів з реалізації стратегії розвитку медичної освіти в Україні на 2019-2021 рр.: Розпорядження КМ України від 21.08.2019 р. № 674-р URL: <https://zakon.rada.gov.ua/laws/show/674-2019-%D1%80>
3. Про затвердження Порядку надання первинної медичної допомоги: Наказ МОЗ України від 19.03.2018 р. № 504. URL: <http://zakon.rada.gov.ua/laws/show/z0348-18>
4. Про ліцензування видів господарської діяльності: Закон України від 02.03.2015 р. № 222-VIII. URL: <http://zakon.rada.gov.ua/laws/show/222-19>
5. Про освіту: Закон України від 05 вересня 2017 р. № 2145-VIII URL: <http://zakon.rada.gov/laws/show/2145-19/>
6. Ehrich Jochen, Namassova-Baranova Leula, Pettoeio-Mantovani Massimo, Plumx Metrics. Indukationto "Diversity of Child Care in Europe: A. Study of the European Pediatric Association. DOI: <http://doi.org/10.1016/j.jpeds/2016.04.036>
7. European Action Plan for Strengthening Public Health Capacities and Services. URL:http://www.euro.who.int/__data/assets/pdf_file/0005/171770/RC62wd12rev1-Eng.pdf?ua=1
8. Health 2020 A European policy framework and strategy for the 21st century. URL: http://www.euro.who.int/__data/assets/pdf_file/0011/199532/Health2020-Long.pdf?ua=1
9. Investing in children: the European child and adolescent health strategy 2015-2020. URL: http://www.euro.who.int/__data/assets/pdf_file/0010/253729/64wd12e_InvestCAHstrategy_140440.pdf?ua=1

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