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**TRENDS IN VOCATIONAL TRAINING OF PHARMACISTS IN UKRAINE**

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**Abstract**

**Purpose:** In the article there has been substantiated the practicality of analysing trends emerging in the contemporary vocational training system of pharmacists-to-be in higher medical education in Ukraine, which resulted from the requirements of the state to train competitive specialists in pharmacy in the labor market and from the demands of society in ensuring efficient and effective pharmacotherapy along with prevention of the population from the diseases. **Methods:** In the article there have been used theoretical methods – the method of theoretical and comparative analysis to do the review of the works of scientists on the development of pharmaceutical education in Ukraine for the period of formation and development of its sovereignty; the synthesis method for grouping trends occurring in the modern pharmaceutical industry of Ukraine, which, at present, are the reflection in modelling educational process of vocational training of pharmacists in the domestic higher educational institutions. **Results:** While doing the synthesis of information sources on the development of pharmaceutical education in Ukraine for the period of establishment and development of its sovereignty, there have been specified, substantiated and characterised the leading trends in the development of modern pharmaceutical industry of Ukraine, which, at present, are the reflected in modelling the educational process of vocational training of pharmacists in the domestic higher educational institutions. In the opinion of the author of the article those trends are as follows: 1) strengthening the moral principles of training for the pharmaceutical industry of Ukraine, which are based on ethics to follow in a pharmacist profession, in a communicative interaction with people needing advice of specialists-pharmacists; 2) orientation to European standards of pharmacy, which are based on high standards of customer service, an increase of social responsibility to society for the quality of services in public health; 3) boosting of domestic pharmaceutical production of medicines and medical equipment in order to overcome the import-dependence of the domestic pharmaceutical market. **Discussion:** The author accents that given the major trends which have been singled out in this scientific investigation, it is important to take into account that the pharmaceutical industry is a complex set of interrelated elements whose effectiveness will depend on effective training system of personnel for the pharmaceutical industry; investments into domestic research projects to develop new medicines; effective system of sales of the medical products and effective marketing activity.

**Keywords:** tertiary medical education in Ukraine; tendencies in vocational training of pharmacists; pharmaceutical industry.

**1. Formulation of the problem and its significance**

Civilisation processes, to be fleetingly developing and changing the dimensions of life in the world, states, individuals and humanity as a whole, actualise the need to solve a number of problems, including the most striking problem being the protection and conservation of health in personal, national and global dimensions. In this context, it is the key factor to its resolution which deserves one's

special attention – improving the quality of vocational training for health care sphere, particularly for the pharmaceutical industry. It results from the requirements of the state to train competitive specialists in pharmacy in the labor market and from the demands of society in ensuring efficient and effective pharmacotherapy along with prevention of the population from the diseases.

The new challenges, which the system of professional training of future pharmacists in the system of modern medical education is currently

facing, are associated with complex and ambiguous approaches to the reformation of the industry throughout the period of formation and development of Ukraine being independent.

Thus, the need for high-quality vocational training of specialists-pharmacists for the pharmaceutical industry of Ukraine in the late twentieth century – the beginning of XXI century, arose due to the increase in the number of pharmacies; uncritical attitude towards media advertising of medicines (which is often of a purely commercial nature), formation of unjustified, in terms of medical science, view on appropriateness of self-treatment and on self-choice of drugs (based on the advice of friends and relatives, information from the Internet resources, etc.).

In view of this, the current challenges, which higher medical education Ukraine is facing, actualise the practicality of analysing trends emerging in the contemporary vocational training system of pharmacists-to-be in the system of higher medical education in Ukraine.

## **2. Analytical review of scientific works dedicated to a solution of the problem**

V. Bobrytska, E. Boychenko, M. Honcharenko, L. Horianii, L. Sushchenko, S. Strashko and others have made significant scientific contributions to the study of theoretical and applied aspects of preserving public health and the training of future specialists to introduce health saving technologies in the sphere of education. In particular, in the scientific writings of V. Bobrytska there has been carried out a retrospective analysis of the strengthening the health student youth [1], substantiated expediency of application of the competence-based approach in strengthening the health of young people [2], specified the education policy priorities of Ukraine in the sphere of health of children and youth [3].

Theoretically relevant for our study are the research papers on the development of various aspects of pharmaceutical education to have been carried out by M. Aliushyn (areas of reconstruction of pharmaceutical science), V. Chernykh, Z. Mnushko, V. Slipchuk (training of personnel for the pharmaceutical industry), V. Moskalenko, I. Bulakh, I. Nizhenkovska (records system and fundamentals of economics in the pharmacy) and others. The subject of the scientific interest of the author of this article is the study of didactic aspects of formation of professional competences of pharmacists while

doing the course «Inorganic Chemistry», quality training pharmacists [4; 5; 6] and so on.

## **3. The purpose and objectives of the article**

The importance of shaping the responsible and balanced state policy in the pharmaceutical industry, the demands of society concerning qualified staff to work in an extensive network of pharmacies in Ukraine, in which professional, social, psychological, financial, marketing, information interests of a significant amount of society is now focused in, makes it necessary to specify the trends in modern vocational training of future specialists-pharmacists in the national system of higher medical education, which defines the purpose of this scientific investigation.

To accomplish the purpose the following tasks are to be resolved: 1) to synthesise the information sources on the development of pharmaceutical education in Ukraine over the period of establishment and development of its sovereignty; 2) to specify, substantiate and elucidate the major trends in the development of modern pharmaceutical industry of Ukraine, which, presently, are reflected in modelling the educational process of vocational training of pharmacists in domestic higher educational institutions.

## **4. Ethical principles of the work of a pharmacist as the current trend of pharmaceutical industry development**

As the starting point of our research we are to consider the estimation that the requirements of the society and state to training competitive, mobile, competent specialists in pharmacy are preconditioned by the fact that pharmacists, pharmaceutical sales representatives, clinical pharmacists are regarded a link which is supposed to provide positive social change in the evaluation of pharmacy, its role and place in the Ukrainian health care system, national health care system and national security.

We believe that the contemporary higher medical education is an institution which is supposed to train highly-qualified personnel for the pharmaceutical sector of the health care system of the state, while, on the other hand, it ensures professional activity placement of a person, developing those qualities which make it possible to preserve public confidence in pharmacists as professionals who will listen to the visitor without formality, provide valuable advice and help in word and deed.

In this regard, training of chemists in higher medical education should take positions of humanistic paradigm of education [6]. Let us specify the chronological limits of scientific search, the results of which we seek to introduce in the contours of the goals of the local study – from 1991 up to the present.

The starting point for the development of the pharmaceutical industry of independent Ukraine was the fact being that by 1991 in our country the training of specialists on the specialty «Pharmacy» was run only on the basis of three higher education institutions: Kharkov Pharmaceutical Institute and pharmaceutical faculties at Zaporizhzhya and Lviv Medical Institutes.

From the end of the twentieth century, the vocational training of the specialists in pharmaceutical industry in Ukraine was started by the National Pharmaceutical Academy of Ukraine, at pharmaceutical faculties of medical universities and academies on specialties «Pharmacy», «Technology of pharmaceuticals», «Clinical Pharmacy», «Technology of perfumery and cosmetic products» which have been functioning so far in many cities of Ukraine (Vinnytsia, Dnipropetrovsk, Ivano-Frankivsk, Lviv, Odesa, Ternopil, Chernivtsi, Uzhgorod, etc.) [7].

We cannot overlook the fact that the Pharmacy Faculty of the National Medical University (NMU) named after O. O. Bohomolets has a positive experience-to-share in training pharmacists. The teaching staff of the Faculty has done hard work in order to review the educational process of training pharmacists in contemporary tertiary medical schools in order to find the innovative basis for its development. The starting point in this search of it is the belief of teachers and students that in the training of the specialists-to-be in pharmacy, it is necessary to provide every participant of the educational process with the conditions for the maximal self-expression based on regarding of the value of a man and his health as the highest personal and social value.

This approach differs significantly from traditional, which is based on the goal of preparation of a medical graduate of higher medical institution for performing certain social functions. We are convinced [6] that from the very standpoint, being the humanistic paradigm of the training, a modern pharmacist's education at the Faculty of Pharmacy NMU named after O. O. Bohomolets should be built so that the future in his/her activities the professional would be guided by understanding the thing that a pharmaceutical organisation is not a retail store of

medicines and other medical or non-medical drugs. It is a patient that should be in the first place, but business interests.

The teachers of the Pharmaceutical Faculty of NMU named after O. O. Bohomolets seek to convey to the students thoughts which are arranged in the logical chain as follows: 1) the modern drugstore seems, at first sight, to close commodity chain and, in fact, is at the top of the pyramid called «Pharmacy»; 2) for service end-users, it is the pharmacist that is a «face» of the institution, and it is very him/her who is responsible for providing skilled pharmaceutical care to the people; 3) a person who comes to a drugstore (pharmacy) is to be provided with a qualified pharmacist's advice, along with sometimes sympathetic conversation and ethical involvement into the issues with their health and loved ones.

## **5. Orientation to European standards as the current trend of training pharmacists**

In specifying the main trends of development of the pharmaceutical industry in Ukraine, we consider it necessary to note its orientation to the European standards, primarily associated with the quality of customer service, an increase of social responsibility to the society for the effectiveness of the provision services in public health care, be committed to the ethic of a pharmacist in marketing activities and communicative interaction with people who need the specialist-pharmacist's advice. It should be noted that in the vocational training of pharmacists (pharmaceutical sales representative) in the European Union (EU) there are accounted the specifics of the European pharmaceutical legal framework.

At present in the pharmacy sphere in the EU there remain in force the regulations that define standards of GMP manufacturing practices, the procedure for registration of medicinal products, medicines classification by category, as well as regulation of medicines circulation (especially those belonging to special categories – innovative, immunological, homeopathic, and drugs to treat rare diseases), the pricing process and so on. The European specialist in the field of pharmacy is guided by the registration scheme being in the EU centralised and decentralised (mutual recognition).

Under the centralised procedure, the decision to permit the marketing is approved by the Commission on the basis of expert findings provided by the European Medicines Agency. It should be pointed out that the decision of the Commission is

binding on all EU member states, and the centralised procedure is followed strictly for medicinal products obtained using through biotechnological methods, and for the medicines including new active substance, or used in the treatment of AIDS, or for cancer and some other nosologies. The only thing a chemist is supposed to know about the decentralised procedure is it is based on the recognition by the national regulatory authority of one of the Member States of permits issued for other member states of the community [8].

To achieve the goal of research it is important to note that the trends of development of the pharmaceutical industry in Ukraine in the late XX century – the beginning of XXI century were predicated upon primarily the fact that during the formation and development of the country as an independent state there were made significant adjustments to the model of the pharmaceutical industry: there was a significant reduction in the range and volume of production of pharmaceutical products [9, p. 3-4].

According to researchers and practitioners, one of the reasons for the decline of production at the chemical-pharmaceutical enterprises was lack of raw materials in Ukraine, seeing that of the total range of medicines which were included a list of important and vital ones, enterprises of the country produced only a small fraction of them. In Ukraine the production of medicines in the form of gels, plasters, capsules, suppositories, transdermal therapeutic systems was completely undeveloped [9, p. 3].

## **6. The development of a national system of production of drugs as a trend in training of the future pharmacists**

The leading trend of the pharmaceutical industry of the first decade of the XXI century, which turns out today and predicted in the future, is to increase the quantity of the imported medicines in the domestic pharmaceutical market.

Therefore, an essential characteristic of the modern pharmacy in Ukraine is its dependence on the imported medicines.

We believe that in the vocational training of pharmacists-to-be in Ukraine it is necessary to consider this trend, because for more than 750 kinds of medicines included in the National List of Essential medicines and medical devices, as well as in the State Official List of Medicines, no domestic equivalents to them there are in it and they are entirely represented in the pharmaceutical market of Ukraine by the foreign-made medicines.

According to expert estimates, significant reserves for the replacement of the imported medicines are in cardiology (63%), anesthesiology and intensive care (61%), rheumatology (60%), hematology (32%), Urology and Andrology (31%), ophthalmology (30%), obstetrics and gynecology (26%). The vast majority of items being antimicrobial, antiviral and antifungal agents can be produced at the domestic pharmaceutical companies [9, p. 4].

Congruent with our views on the development of professional competence of pharmacists in the process of acquisition of their future career at higher medical schools, particularly in relation to the problem of overcoming the «dominance» of imported drugs in the domestic market, the attitude to advising clients of pharmacies, are the inferences of the participants of the VIII<sup>th</sup> National Conference of the Pharmacists of Ukraine, held on February 22, 2016 in Ukraine. As a result, in educational process at the Faculty of Pharmacy of NMU named after O.O. Bohomolts, the students and teachers ponder on the fact that in Ukraine there are a number of preconditions for overcoming the domestic pharmaceutical market depending on the imported medicines.

We are to list those preconditions: first, Ukraine was the first country among the CIS countries to have joined the International System of Pharmaceutical Inspection Cooperation (PIC/S), getting associated in this process with 37 leading countries; secondly, in the country there has been set up an appropriate system of registration of medicines and approved the international format of the registration dossier; thirdly, Ukraine has developed and put into action the State Pharmacopoeia of Ukraine, which is harmonised with the European Pharmacopoeia; fourthly, to the license conditions for the production and sale of medicines in Ukraine there were forced into application the mandatory requirements for compliance with the rules of GMP and GDP; fifthly, in our country there have been adapted and forced into application the relevant European guidelines governing the development and research of medicines.

## **7. Conclusions and Recommendations**

Summing up the above, we note that the most noticeable trends in the development of modern pharmaceutical industry of Ukraine, which, at present, are reflected in modelling the educational

process of the vocational training of pharmacists at domestic tertiary medical establishments are:

1) establishment of ethical principles of training the specialists for the pharmaceutical industry of Ukraine, which are based on keeping the ethics in the pharmacist profession, communicative interaction with people needing advice of a specialist-pharmacist;

2) orientation to the European standards of pharmacy, which are based on high standards of customer service, increased social responsibility to society for the quality of services in public health provided;

3) development of the domestic pharmaceutical manufacturing of medicines and medical equipment in order to overcome import dependence of the domestic pharmaceutical market.

It should be noted that having taken into account the major trends that we have specified in this scientific exploration, it is important to consider in the vocational training of future pharmacists in the national medical education the fact that the pharmaceutical industry is a complex set of interrelated elements whose effectiveness seems to depend on effective training system; investments into the domestic research projects to develop new medicines; organising the effective system of sales of medical products and effective marketing activity.

The prospects of future scientific studies of the author are the improvement of standards of vocational training of future pharmacists in domestic higher medical educational institutions.

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### Тенденції професійної підготовки фармацевтів в Україні

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У статті обґрунтовано доцільність аналізу тенденцій, що виникають у сучасній професійній підготовці майбутніх фармацевтів у системі вищої медичної освіти України, що обумовлено вимогами держави до підготовки конкурентоспроможних на ринку праці спеціалістів з фармації, а також запитамі суспільства у забезпеченні доступної та ефективної фармакотерапії і профілактики захворювань населення.

У процесі узагальнення інформаційних джерел з проблем розвитку фармацевтичної освіти в Україні за період становлення й розвитку її суверенітету виокремлено, обґрунтовано і схарактеризовано провідні тенденції у розвитку сучасної фармацевтичної галузі України, які натеper знаходять відбиття у моделюванні освітнього процесу з професійної підготовки провізорів у вітчизняних вищих медичних навчальних закладах. На думку автора статті такими тенденціями є: 1) утвердження етичних засад підготовки фахівців для фармацевтичної галузі України, основою яких є дотримання етики фармацевта в професійній діяльності, комунікативній взаємодії з людьми, що потребують консультативної допомоги фахівців-провізорів; 2) зорієнтованість на європейські стандарти фармації, основою яких є високі стандарти обслуговування клієнтів, підвищення соціальної відповідальності перед суспільством за якість надання послуг з охорони здоров'я населення; 3) розбудова вітчизняного фармацевтичного виробництва лікарських засобів і медичного обладнання з тим, щоб подолати імпортозалежність вітчизняного фармацевтичного ринку.

Автор наголошує, що враховуючи основні тенденції, які було виокремлено у даній науковій розвідці, важливо зважати на те, що фармацевтична галузь є складним комплексом взаємопов'язаних елементів, ефективність якого буде залежати від якісної системи підготовки кадрів для фармацевтичної галузі; інвестицій у вітчизняні науково-дослідницькі проекти зі створення нових лікарських препаратів; організації дієвої системи збуту лікарських засобів та ефективної маркетингової діяльності у даній сфері.

**Ключові слова:** вища медична освіта України; тенденції професійної підготовки фармацевтів; фармацевтична галузь.

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#### **Тенденции профессиональной подготовки фармацевтов в Украине**

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В статье обоснована целесообразность анализа тенденций, возникающих в современной профессиональной подготовке будущих фармацевтов в системе высшего медицинского образования Украины. По мнению автора это обусловлено требованиями государства к подготовке конкурентоспособных на рынке труда специалистов в сфере современной фармации, а также запросами общества по обеспечению доступной и эффективной фармакотерапии и профилактики заболеваний населения.

В процессе обобщения информационных источников по проблемам развития фармацевтического образования в Украине за период становления и развития ее суверенитета выделены, обоснованы и охарактеризованы основные тенденции в развитии современной фармацевтической отрасли Украины, которые на данный момент отражаются в моделировании образовательного процесса по профессиональной подготовке провизоров в отечественных высших медицинских учебных заведениях. Автором статьи сформулированы такие тенденции: 1) утверждение этических основ подготовки специалистов для фармацевтической отрасли Украины, основой которых является соблюдение этики фармацевта в профессиональной деятельности, коммуникативном взаимодействии с людьми, которые нуждаются в консультативной помощи специалистов-провизоров; 2) ориентация на европейские стандарты фармации, основой которых являются высокое качество обслуживания клиентов, повышение социальной ответственности перед обществом за эффективность предоставления услуг по охране здоровья населения; 3) развитие отечественного фармацевтического производства лекарственных средств и медицинского оборудования с тем, чтобы преодолеть импортозависимость отечественного фармацевтического рынка.

Автор отмечает что, учитывая основные тенденции, которые были выделены в данной научной статье, важно принимать во внимание то, что фармацевтическая отрасль является сложным комплексом взаимосвязанных элементов, эффективность которого будет зависеть от качества системы подготовки кадров для фармацевтической отрасли; инвестиций в отечественные научно-исследовательские проекты по созданию новых лекарственных препаратов; организации рентабельной системы сбыта лекарственных средств и продуктивной маркетинговой деятельности в этой сфере.

**Ключевые слова:** высшее медицинское образование Украины; тенденции профессиональной подготовки фармацевтов; фармацевтическая отрасль.

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