

**Valentyna Slipchuk**

*Doctor of Sciences in Education, Associate Professor,  
Professor of the Department of Medical  
and General Chemistry,  
Bogomolets National Medical University,  
Kyiv, Ukraine  
orcid.org/ 0000-0002-9552-029X*

---

**PERIODS OF DEVELOPMENT AND CRITERIA FOR COMPARING  
PROFESSIONAL TRAINING OF PHARMACEUTICAL INDUSTRY SPECIALISTS  
IN UKRAINE IN THE 20TH - EARLY 21ST CENTURIES (UNTIL 2017)**

---

***Abstract.** The periodization of professional training of pharmaceutical industry specialists in Ukraine in the 20th and early 21st centuries has been elaborated and substantiated. The division is based on a criterion of change in the internal organizational and institutional development of professional training of pharmaceutical industry specialists, and at the same time we correlate with socio-political shifts, with the conditions for economic development of education in general and pharmaceutical education in particular. The criteria for comparing the state of development of professional training of pharmaceutical industry specialists in Ukraine in certain chronological frameworks of the XX - beginning of the XXI century are substantiated. (Social, institutional, informative) and indicators are justified, revealing the content of each criterion.*

---

**Introduction.**

Preserving the past in people's memory implies imitation of glorious traditions, bringing up people in a spirit of gratitude and honesty in relation to antiquity and modernity. Knowledge and respect for the diversity of the history of the professional training of specialists in the pharmaceutical industry and pharmacy, medicine and health care primarily involves love for Ukraine [5, 76 pp.]. The history of development of professional training of pharmaceutical industry specialists, as well as the history of the development of education in general, is extremely relevant in terms of reforming, improving the organization of the educational process in higher education institutions of medical (pharmaceutical) education, since an objective analysis of past experience is important in the further development of science and education.

The development of professional training in the pharmaceutical industry is connected not only with the history of pedagogy, the history of development of higher medical (pharmaceutical) education, but also with the history of medicine, domestic and world pharmaceutical science, the history of pharmacy, the development of the health care system, the development of medical and pharmaceutical science history of Ukraine. Therefore, the works in these industries are of interest for this research.

The evolution of domestic pharmacy covered in his scientific studies M. L. Syatynya. The history of pharmaceutical business is the history of the long and heroic efforts of mankind aimed at finding and improving medicinal and preventive means to struggle with illnesses, the history of the formation, establishment, development and functioning of pharmacy business [23, p. 3]. Pharmacy, as an integral part of public health, is directly dependent on the real situation in the state, the level of economic and social development of society [23, p. 527]. Defining the periodization and chronological framework of the study of the professional training of pharmaceutical industry specialists in Ukraine, it should be noted that they are quite relative and schematic, since it is very difficult to find starting points for the beginning or completion of certain trends in the development of pharmaceutical education because of their multidimensionality, waveform, dependence from socio-economic, socio-political, socio-pedagogical and cultural factors [20, 520 p.].

### **1. Justification of the chronological boundaries of the research of professional training of pharmaceutical industry specialists in Ukraine and the criteria for their comparison**

The chronological framework of the research covers the period of the twentieth century - the beginning of the XXI century (until 2017). The lower chronological boundary of the research of the professional training of pharmaceutical industry specialists in Ukraine (XX century) is due to the low socio-economic development of the country, the organization of pharmacy business and the related development of professional training of pharmaceutical industry specialists. The upper chronological boundary of the study (the beginning of the 21st century) is due to significant socio-economic transformations in Ukraine, the emergence of the labor market and the phenomenon of unemployment associated with them, globalization processes throughout the world, informatization of society, development, integration and internationalization of professional training of pharmaceutical industry specialists in independent Ukraine, the need to adapt a specialist of the pharmaceutical industry to the modern realities of life.

It is worth noting that in the early twentieth century due to the economic backwardness in the territory of Ukraine under Russian rule, the own pharmaceutical industry was not created. In accordance with the decisions of the IX Pirogov Congress (St. Petersburg, 1904), it was necessary to petition the Ministry of the Internal Affairs of the Russian Empire for urgent reform of the existing organization of pharmacy business, since the right to manufacture medicines was provided exclusively to pharmacies and pharmacists prevented the emergence of the national pharmaceutical industry [4, p. 13-14]. In order to avoid this monopoly barrier foreign pharmacy firms rented pharmacies and then set up industrial laboratories for the production of galenic and other pharmaceutical formulations. Thus, almost 70% of the medicines delivered from abroad, and chemical medicines that were produced in the territory could satisfy only 9% of the territory of Ukraine under Russian rule need for them, galenic formulations consequently - 36% [23, p. 206].

As of 1910, out of the total number of 4536 pharmacies that functioned in the territory of the Russian territory of Russia, 70% (3151) belonged to pharmacy technicians, namely: 51.5% belonged to pharmacists, 16.5% belong to apothecary assistants and 1.3% belong to pharmacy masters. Public institutions and private organizations (zemstvo and city governments) owned only 199 pharmacies (4.4%), city governments - 35, governorate governments - 12, and uyezd governments had 152 pharmacies [23, p. 208].

In order to increase the volume of medical assistance to the population, zemstvos established direct contacts with foreign pharmaceutical companies, which contributed to a reduction in expenses from the local budgets of the zemstvos by 20-25%. The purchase of medicine formulations by zemstvos in foreign firms led to the fact that domestic druggists were forced to study seriously the global market for pharmaceutical materials and reduce drug prices [23, p. 209]. December 28, 1918 after signing a decree by Council of People's Commissars of the RSFSR on the nationalization of pharmacies and other pharmacies institutions, all pharmacies were removed from the private owners and transferred to the Office of the People's Commissariat of Health, which also included the pharmaceutical department. In 1919, the work on combining preparations of medicinal raw materials and transferring them to government agencies for processing and use began. In 1921, the Council of People's Commissars issued a special decree on the collection and culture of medicinal herbs, and in 1931 the All-Union Scientific Research Institute of Medicinal Plants was formed [13, p. 12]. A characteristic trend of the beginning of the twentieth century there was a significant savings in the purchase of medicines, which allowed zemstvos to switch to the practice of cheaper or free distribution of medicines to the population [18, p. 62].

The development of the pharmaceutical industry and education contributed to the development of the pharmacy network in the Ukrainian lands. Pharmacy network in the regions of Ukraine in the early twentieth century grew up despite the unfavorable circumstances. The largest number of pharmacies was in Poltava region. There were private pharmacies in each uyezd city [14, p. 33-34].

Cultivation, collection and sale of medicinal plants were a major local trade for peasants in the Lubenskyi uyezd of the Lubenskyi governorate, which contributed to the development of the pharmaceutical industry of that time. Only in 1912 more than 14.5 thousand poods (236350 kg) of medicinal herbs were sent from Luben abroad [14, p. 33-34]. The greatest progress was achieved in the center of the Ukrainian lands of the Russian Empire - in Kiev in the development of the pharmaceutical industry in the early twentieth century. There were three large pharmacies on Khreshchatyk, two on Volodymyrska street and one each on Velyka Vasylkivska and Velyka Pidvalna streets [8, p. 41]. At the beginning of the WWI, 468 thousand Kyiv residents had the opportunity to apply for medicines, if necessary, to the services of 43 drugstores, 146 pharmacy warehouses, pharmacy and perfumery stores. Of great importance in the development of professional training in the pharmaceutical industry beginning of the twentieth century were community organizations and societies.

At that time, the "South-Western Union of Pharmacists" (1907), "The Kyiv Pharmaceutical Society for Mutual Aid", and "The Kyiv Society of Pharmacists" acted in Kyiv. Various chemical, chemical-medical and bacteriological analyzes were carried out by the Chemical and Pharmaceutical Institute and the Bacteriological Institute, which operated under the Kyiv Society of Pharmacists. In addition, the Chemical and Pharmaceutical Institute conducted training courses, which contributed to the development of professional training for the pharmaceutical industry at the time. A weekly "All-Russian Pharmaceutical Bulletin" was also published in Kyiv in 1912-1913 [7, p. 356, 362, 547-548].

In 1913, 1067 pharmacies operated throughout the territory of Russian Ukraine, out of which 1024 belonged to private owners and 43 to zemstvos. So, there was one pharmacy per 24,000 residents of Ukraine (in Kyiv, the situation was much better, since one pharmacy accounted for 10.9 thousand residents). As for the pharmaceutical industry specialists, 2009 pharmacy technicians worked in these pharmacies, among them 758 with higher education and 1251 with secondary pharmaceutical education [25, p. 21].

From the report of the pharmaceutical department of the medical department of the Ministry of People's Health and Guardianship in 1918, we were informed that rules were established on the educational qualifications that apothecary students required for admission to apothecary, and a special circular was issued.

The analysis of documents of the National Archival Fund of the Central State Historical Archive of Ukraine (Kyiv) shows that in 1918 six-months evening (training) vocational training courses for the rank of pharmacy technical pupil were established in Zhitomir [26, p.1-3].

According to archival sources, the period of activity of the People's Commissariat of Education of the Ukrainian SSR and its departments from 1918 to 1920 included the following list of medical, chemical and pharmaceutical educational institutions that contributed to the development of professional training of pharmaceutical industry specialists of the indicated years [21, p. 224]: 7 higher educational institutions (Katerynoslavsjska Medical Academy, Katerynoslavsjska Medical Institute, Kyiv Medical Academy, Kyiv Medical Institute, Kyiv Health Institute, Kharkivsjska Medical Academy, Kharkyvsjkyi Medical Institute); 1 technical school (Vinnytskyi pharmaceutical technical school); 1 school (Kremenchutsjska obstetric paramedical school).

For historiographic analysis of the development of professional training of pharmaceutical industry specialists in Ukraine at each historical period in the twentieth century - at the beginning of the XXI century there are three criteria: social; institutional; meaningful. There were defined indicators that reveal the content of each criterion.

The 1st criterion - social - is determined by such indicators as:

1. Gender equality of future specialists.
2. Independence of education inspite of ethnic origin, religion.
3. Academic mobility.

The 2nd criterion - institutional - is determined by such indicators as:

1. The network of pharmaceutical educational institutions, which carry out educational activities for the training of specialists in the pharmaceutical industry.
2. Number of degrees of professional training of specialists in the pharmaceutical industry.
3. Institutions of professional development of specialists of the pharmaceutical industry.

The third criterion - meaningful - is determined by such indicators as:

1. Content, forms and methods of professional training of pharmaceutical industry specialists.
2. Duration of training.
3. Forms of advanced training of specialists in the pharmaceutical industry.

## **2. Justification of the periods of development of professional training of specialists in the pharmaceutical industry in Ukraine since 1921 till 1945**

The distinction of the period of formation of professional training of the pharmaceutical industry specialists is determined by the criterion of the internal state of this training, which was limited in content and professional sense. Only in 1921 in Ukraine (then - the Ukrainian SSR) institutions of higher pharmaceutical education were organized. The first period - 1921-1941- formation of a system of (secondary and higher) pharmaceutical education as a separate industry; the second period - 1941-1945 - drawdown the development processes of the system of professional training of pharmaceutical industry specialists, its conservation in the conditions of the WWII on the territory of Ukraine; the third period - 1945 -the first half of the 1960s - restoration and expansion of the system of professional training of pharmaceutical industry specialists; the fourth period is the second half of the 1960s. - 1991 - modernization and ideologization of professional training of specialists in the pharmaceutical industry; the fifth period - 1991 - until 2017 - the formation of a nationally directed professional training of the pharmaceutical industry in the context of the integration of our state into the world educational space [19, 544 p.].

The lower boundary of the first period - 1921-1941 was lined due to the formation of a system of (secondary and higher) pharmaceutical education as a separate industry. Unity in resolving the issue of how to develop professional training for the pharmaceutical industry in the conditions of disunity of the Ukrainian lands did not exist at that time, since professors and masters of the pre-revolutionary school of Ukraine insisted on training specialists of a single type with higher education, and the leaders of the pharmacy workers union insisted on creating a single pharmaceutical education with a limited program without training specialists with higher education.

Various positions in the matter of longitude of study also existed and projects for a four-year technical school, three-year and two-year schools were proposed.

Pharmaceutical education has not received the necessary development. As a result of constructive discussions, the name of higher education as a pharmaceutical, rather than chemical and pharmaceutical, was adopted. In addition, it was decided to create a two-year school with six trimesters, but with the proviso that this is “the first stage of pharmaceutical education”. And the question of creating a higher pharmaceutical school for professional training of industry specialists remained unresolved [1, p. 20-21].

The principles and foundations of pharmaceutical education and its outlook were identified at the First All-Union Meeting on Pharmaceutical Education [1, p. 20-21].

It was 1921 that the institutionalization of pharmaceutical education began, which contributed to the development of professional training of specialists in the pharmaceutical industry with higher education. In the 20s twentieth century pharmacy network of Ukraine increased by 637 pharmacies (without Western Ukraine). The number of pharmacies and sanitary and hygiene stores increased by more than 2.6 times [17].

An important event occurred in January 1926 in Western Ukraine during their being as a part of Poland, when the Minister of Religion and Education of Poland legitimized the creation of the first pharmaceutical faculty at the University of Warsaw. On the territory of the Polish state, the Faculty of Pharmacy at the University of Warsaw remained the only separate unit for professional training of future pharmaceutical industry specialists with the same rights and privileges as other faculties until the beginning of WW II [27, p. 85-87].

The development of professional training for the pharmaceutical industry and pharmacy in general also contributed to the fact that instead of the branches of the All-Ukrainian Pharmacy Department, from March 1, 1935, regional pharmacies throughout the Ukrainian lands were organized, and this, in turn, contributed to the development of the pharmacy chain and the growth of pharmaceutical industry experts [24, p. 123].

During 1921 - 1940, the forms and methods of teaching, curricula and programs improved, research topics increased, the network of pharmacies and the number of specialists in the pharmaceutical industry increased, and training of pharmacists in correspondence education and approval of the status of pharmaceutical education in higher education began, which eventually led to its separation as an independent educational and scientific industry [27, p. 85-87].

The upper limit of the first period - 1921-1941 - was lined due to the termination of the expansion of the pharmacy network and the growing number of specialists in the pharmaceutical industry, pharmaceutical science and, accordingly, a decrease in the number and membership of secondary medical (pharmaceutical) schools and higher medical education (pharmaceutical) education in Ukraine on the eve of the WWII on the territory of Ukrainian lands. The lower boundary of the second period - 1941 - 1945 - was lined due to the drawdown of the processes of development of the system of professional training of pharmaceutical industry specialists, its conservation in the conditions of the WWII on the territory of Ukrainian lands.

Among the main trends in the training of specialists in the pharmaceutical industry in 1941-1944, it is worth noting the unification of curricula for pharmaceutical courses to the requirements for professional undergraduate training of future specialists in the pharmaceutical industry in universities of other countries, for example, Germany; lack of general educational disciplines in the curriculum; wide use lectures and practical exercises in the process of training future specialists of the pharmaceutical industry.

The upper limit of the second period - 1941-1945 - was lined due to the post-war revival of the training of specialists in the pharmaceutical industry, the expansion of the pharmacy chain. The trend of the development of the pharmaceutical industry and the training of specialists for the pharmaceutical industry took place almost throughout the territory of Ukraine, namely, the restoration of the structure of pharmaceutical faculties according to the pre-war model and the involvement of specialists from all regions of Ukraine in the training of future specialists of the pharmaceutical industry (pharmaceutical) institutes of Ukraine.

### **3. Justification of the periods of development of professional training of specialists in the pharmaceutical industry in Ukraine since 1945 till 2017**

The lower boundary of the third period - 1945 - first half of the 1960s - was lined due to the restoration and expansion of the system of professional training for the pharmaceutical industry, an increase in the number of pharmaceutical industry specialists with higher pharmaceutical education necessary for the development of pharmaceutical science and the pharmaceutical industry as a whole and improvement of the provision of medicines for the Ukrainian population of 3396 pharmacists in Ukraine as of 01.10. 1950 - 2746 worked in cities and 650 in regional centers and rural areas.

In 1950, 250 pharmacists passed through the program of the Institute of Improvement to improve the professional training of industry specialists. On the ground, the courses were held by Ukraine Pharmaceutical Institutes and the Central Research Laboratory of Ukraine where education improved 650 people under the program of the Department of Special Medical Care of the Healthcare Administration. For the development of professional training for the pharmaceutical industry of Ukraine, scientific-practical conferences were systematically held in regional centers and other major cities of Ukraine by means of the Central Research Pharmacy Laboratory, pharmaceutical institutes and pharmaceutical societies.

The upper limit of the third period - 1945 - first half of the 1960s - was lined due to the expansion of the system of professional training of specialists in the pharmaceutical industry, the emergence of the need for pharmacists who must work in the system of the Kyiv Regional Pharmacy Management and inadequate drug supply to the population of Ukraine. In 1961, 473 pharmacists graduated from pharmaceutical institutes and pharmaceutical faculties of the Ukrainian SSR. Out of this number, 75 were sent to other republics and departments. For distribution between 25 regions of the Ukrainian SSR, 358 pharmacists remained [9, p. 21].

Among the main trends of the outlined period is the introduction of new forms of organization of the educational process in the professional training of specialists in the pharmaceutical industry. The lower boundary of the fourth period is the second half of the 1960s. - 1991 - was lined due to the modernization and ideologization of professional training of specialists in the pharmaceutical industry, the spread of the idea of lifelong learning. Particular steps were taken to increase the representation of Ukrainian scientists in the USSR Academy of Medical Sciences since 1965 [12, p. 113-116].

Considerable attention was paid to the introduction of small-scale mechanization in pharmacies on the territory of Ukraine — this led to a change in the pharmacy technician's work: its quality improved and its efficiency increased [10, p. 58-61].

The lower boundary of the fourth period is associated with the continuation of the spread of the idea of non-interrupting education in the world and its influence on the development of pharmaceutical education in Ukraine. A characteristic feature of the outlined period are changes in the curriculum and organization of the educational process in the professional training of specialists in the pharmaceutical industry in 1965, the introduction of correspondence courses, the beginning of professional training for foreign countries. The upper limit of the fourth period is the second half of the 1960s. - 1991 - was lined due to the adaptation of society to new living conditions in post-Soviet society and the development of decentralization tendencies, which caused separation from the former all-Union pharmaceutical network and pharmacy independence and the crisis of the pharmaceutical industry as a whole. In 1988, by the decision of the USSR Ministry of Health, the Republican Apothecary Department and its regional divisions were liquidated. But on October 28, 1988, the Minister of Health of the Ukrainian SSR approved the "Model Statute of the regional (city) production association" Pharmacy" " and passed the decision of the case locally to the executive committees of the regional (city) Councils of People's Deputies [20, 520 p.]. In the Soviet Union, the development of decentralized tendencies caused a separation from the former all-Union pharmaceutical network and the independence of the pharmacy business of each of the republics of the USSR. The Ukrainian SSR was not the exception for this [23, p. 529].

The main trends of the outlined period are: the expansion of the content of the professional training of future specialists in the pharmaceutical industry; formation of a potent scientific base and expansion of the curriculum of professional undergraduate training of future specialists in the pharmaceutical industry; focusing on the integration of vocational-oriented and special disciplines of professional undergraduate training of specialists in the pharmaceutical industry; the usage of traditional organizational forms of education; reducing the classroom study of future pharmaceutical industry professionals; an increase of independent work of future specialists in the pharmaceutical industry; widespread use of problem and research teaching methods; the growing importance of educational and industrial practices; introduction of internship, etc.



The lower boundary of the fifth period - 1991- until 2017 - was lined due to fundamental political, social and economic changes, the reform of the professional training of specialists in the pharmaceutical industry and the reconfiguration of the existing medicinal provision management system in Ukraine. The lower boundary of the outlined period also completes a whole epoch of the historical development of the pharmaceutical industry, due to the adoption of the Law of Ukraine "On Medicines" of April 4, 1996 and the Resolution of the Verkhovna Rada of Ukraine "On the Enactment of the Law of Ukraine" On Medicines "of April 4, 1996. [15, p. 214].

Until 1991, professional training of specialists for the pharmaceutical industry in Ukraine was carried out only in one specialty - Pharmacy, which fully met the industry's need for specialists. The collapse of the Soviet Union set new large-scale tasks for the pharmaceutical industry of Ukraine that required a qualitatively new approach to the training of pharmaceutical industry specialists, reformation of existing curricula and training programs for specialists at all levels [2, p. 16-17].

Realization of the real reconfiguration of the medicinal provision management system has become a top priority and strategic task.

All efforts of health authorities and institutions are aimed at finding a way out of the crisis in the medicinal provision of the population, the supply of vital medicines to Ukraine.

The improvement of the situation of providing the population with medicines, comprehensive development and improvement of the pharmacy service was planned by increasing the efficiency of pharmaceutical science, pharmaceutical education and professional training of pharmaceutical industry specialists with subsequent integration with the production and introduction of science and technology in the practice of pharmacy institutions. As of January 1, 1993, 6,512 pharmacies, 1,533 pharmacies of the first category, 16,800 pharmacies of the second category functioned in the system of the Ministry of Health of Ukraine. One pharmacy served an average of 8 thousand people.

In the years of independence, the chemist's chain was reorganized, part of them became private, having created Ltd-s or Closed Joint-Stock Companies [3, p. 27].

Fundamental changes in pharmacy needed the support of the state and, above all, legislative support. With the adoption of a number of market laws by the Verkhovna Rada of Ukraine ("On the Company", "On the Entrepreneurship", "On the Business Societies", etc.), the long-awaited processes of demonopolization and denationalization began in the pharmaceutical industry [23, p. 531].

Taking into account the achievements of domestic and foreign experience, as well as the specifics of the socio-economic development of our state, the Ministry of Health of Ukraine attempted to organize its own structures for managing the pharmaceutical industry at the state level: the State Inspectorate for Quality Control of Medicines, the Committee for New Medical Equipment, the Pharmacopoeia Committee, Pharmacological Committee, which were the integral parts of the structure of the Ministry of Health [23, p. 534].

The Law of Ukraine "On Medicines" dated April 4, 1996 [6, p. 203-214] is a fundamental legal document that records changes in the domestic pharmaceutical industry during the first five years of the independence of Ukraine. Since the end of XX century pharmaceutical education in Ukraine has undergone significant changes. Its defining trend today is multidisciplinary. New pharmaceutical specialties - "Technology of pharmaceutical formulations", "Technology of perfumery and cosmetic products" and "Clinical pharmacy", which appeared in the period from 1992 to 1998, reflect the diversity of modern pharmacy [2, p. 16-17]. The upper limit of the fifth period - 1991 - until 2017 - was lined due to the development of professional training for the pharmaceutical industry in the independent Ukraine and the pharmaceutical industry as a whole, the country's integration into the global educational space, one of the priority direction for the development of the Ukrainian pharmaceutical industry is "integration of industrial, commercial, financial and scientific potential of the industry" [22, p. 6]. On January 1, 2000, the Law of Ukraine No. 991-XIV "On a Special Regime for Investment and Innovation Activities of Technological Parks" signed by the President came into force, which allowed Ukrainian enterprises to cooperate and was the real way in which national producers could get out of difficult economic situations and to enter the international market.

The main trends of this period are : the foundations of the national education system was laid out ; at the legislative level, the philosophical and methodological foundations of the reform of a higher pharmaceutical school have been determined in order to implement the state's strategic course towards EU integration; network of higher education institutions was expanded; new faculties and institutes were created in the structure of universities, new types of ownership (private and commercial) and Universities of The Third Age appeared.

Also, the pharmacy chain was significantly expanded. For the needs of the Chernihiv region in 2000 on the basis of the Chernihiv Pedagogical University, with the aim of training specialists for the pharmaceutical industry, a branch of the National Pharmaceutical Academy of Ukraine was opened, and in 2002 a branch of the Department of Technology and Clinical Pharmacy of the Kyiv Medical Academy of Postgraduate Education named after P. L. Shupyk [3, p. 30]. The system of pharmaceutical education, upbringing and the formation of the personality of a specialist in the pharmaceutical industry, whose vocation is to help people, requires constant and consciously organized improvement of the system of professional training of specialists in higher medical education (pharmaceutical) education.

A group of researchers of pharmacy technicians and researchers of teachers (V. P. Chernykh, B. S. Zimenkovskiy, I. E. Bulakh, I. S. Vitenko, V. M. Tolochko, T. G. Kalynyuk, etc.) during 2000 - 2003 worked on the development of methodological principles of state standards in the system of higher pharmaceutical education. As a result of this work, educational qualification characteristics of a specialist-pharmacist of educational qualification level "specialist" and educational professional programs were formulated for the sectoral State standard of higher pharmaceutical education and general methodological principles as a basis of pedagogical diagnostics of the quality of specialist training were also formulated.

The aim of the pharmaceutical industry was always the same - to ensure the curative process of people. The optimal way to solve this issue is to choose on everything new, progressive, but necessarily taking into account the positive experience taken from the past [11, p. 131]. The daily distribution of the product range and nomenclature of medicines and their dosage forms confirms the need to introduce new disciplines and complement existing ones in the professional training of a specialist in the pharmaceutical industry. The current state of the world pharmacy requires from the pharmaceutical industry specialists, regardless of their specialization, computer skills, in-depth knowledge of biomedical disciplines, and knowledge of the latest medicines manufacturing technologies and the basis knowledge of pharmacoeconomics [16, 142 p.].

Further development of the pharmaceutical industry will require the emergence of new forms and methods of teaching. The state of pharmaceutical education demonstrates its flexibility and willingness of higher educational medical (pharmaceutical) institutions to provide the most diverse requirements and needs of its industry for professional training.

Professional training of specialists in the pharmaceutical industry of Ukraine has its own specific features, principles and characteristics, since it is this profession that is socially important and is aimed at preserving and strengthening human health. The pharmaceutical industry specialist does not directly treat the patient, but assists it, and this assistance must be of high quality. Medical services, which are engaged in the pharmaceutical industry, actively influences health and human activity, contributes to the preservation of health and productivity.

### **Conclusions.**

The main chronological boundaries and periods of development of professional training of specialists in the pharmaceutical industry in the XX - early XXI century are researched and justified. The division is based on a criterion of change in the internal organizational and institutional development of professional training for the pharmaceutical industry, which is simultaneously correlated with socio-political processes, with the conditions for the economic development of education in general and pharmaceutical education in particular. The historical period since the end of the XVI century until 1921, was characterized as the formation of domestic professional training for the pharmaceutical industry in all Ukrainian lands. Based on the analysis of archival sources and scientific and methodological pedagogical literature in the development of professional training for the pharmaceutical industry in Ukraine from 1921 to 2017, five periods were defined: 1921 - 1941 -the formation of a system of (secondary and higher) pharmaceutical education as a separate industry; 1941 - 1945 - it is marked as the period of liquidation of the processes of development of the system of professional training of pharmaceutical industry specialists, its conservation in the conditions of the WWII ; 1945 - the first half of the 1960s -it is defined as the period of recovery and expansion of the system of professional training of specialists in the pharmaceutical industry; the second half of the 1960s - 1991 - it is highlighted as a period of modernization and ideologization of professional training of

pharmaceutical industry specialists; 1991 - until 2017 - it is argued that the formation of a nationally directed professional training of pharmaceutical industry specialists in the context of the integration of our state into the global educational space, which continues today.

In the process of the research, the criteria for comparing the professional education of the pharmaceutical industry in Ukraine in the 20th - early 21st century were determined: social; institutional; meaningful. The indicators that reveal the content of the social criterion include: gender equality of future specialists; independence of education from ethnic origin, religion; academic mobility. The indicators of the institutional aspect include: a network of pharmaceutical schools that conduct educational activities in the training of specialists in the pharmaceutical industry; the number of levels of professional training of the pharmaceutical industry; institutions of advanced training for specialists in the pharmaceutical industry. The indicators of the meaningful criterion include: the content, forms and methods of professional training of specialists in the pharmaceutical industry; training period; forms of advanced training for specialists in the pharmaceutical industry.

### References.

1. Arzhanov, N. P. (1997). Attempts to reform pharmaceutical education in Russia at the beginning of the century. *Provy`zor*, 23, 20–21 (ukr).

2. Budanova, L. G. (2004). Standardized means for evaluating professional knowledge in the structure of state standards of pharmaceutical education. *avtoref. dy`s. ... kand. ped. nauk: 13.00.04. Ky`yiv*, 22 (ukr).

3. Grusha, A. M., Pastaly`cya, S. V., & Dulya, M. M. (2003). Development of medicine and pharmacy in Chernihiv region. *Chernigiv*, 48 (ukr).

4. Gubs`ky`j, I. M. (1964). Pharmacy in the Ukrainian SSR. *Ky`yiv: Zdorov'ya* (ukr).

5. Dergunova, L. Yu. (2009). History of medicine in Nikolaev. *My`kolayiv: Ilion* (ukr).

6. Zakon Ukrayiny` «Pro likars`ki zasoby», 4 kvitnya 1996 r. (1997). [Law of Ukraine "On Medicines"]. *Zakony` Ukrayiny`: Oficijne vy`dannya. Ky`yiv*, 10 (ukr).

7. Kalendar`: Spravochnaya y` adresnaya kny`ga g. Ky`eva na 1913 god. (1912). [Calendar: Reference and Address Book of Kiev in 1913]. *Ky`ev*, 547–548. (ukr).

8. Ky`ev: `Ency`klopedy`chesky`j spravochny`k (1982). [Kiev: Encyclopedic reference book] / A. V. Kudry`czky`j (Ed.). *Ky`ev: US`* (ukr).

9. CzDAVO Ukrayiny`. Ly`st MOZ URSS do CzK Kompartiyi Ukrayiny` z obg`runtuvanniam nemozhly`vosti zbil`shy`ty` kil`kist` vy`puskny`kiv-provizoriv, yaki b maly` pracuyvaty` u sy`stemi Ky`yivs`kogo oblasnogo APTU 20 bereznya 1961 roku (1961). *F. 1, op. 82, spr. 193, ark. 21* (ukr).

10. Lyubchenko, L. M. (1968). Medicinal aid for the rural population. *Aptechnoe delo na Cherny`govshy`ne. Cherny`gov*, 58–61 (ukr).

11. Ljashenko, N. (2004). Vasilij Prokopishin – patriarh farmacii [Vasily Prokopyshyn - patriarch of pharmacy]. *Kiev: Biblioteka ukrayincy* (rus).

12. CzDAVO Ukrayiny`. Memorandum zastupny`ka Golovy` Rady` Ministriv

URSR P. T. Tron`ka ta Ministra oxorony` zdorov'ya URSR P. L. Shupy`ka do Prezy`diiy CzK KPU shhodo potreby` zbil`shy`ty` predstavny`cztvo ukrayins`ky`x ucheny`x u skladi AMN SRSR, 1 ly`pnya 1965 roku (1965). F. 1, op. 31, spr. 2794, ark. 113–116. Z ory`ginalu. (ukr).

13. Naukovy`j visny`k Mizhnarodnogo gumanitarnogo universy`tetu [Scientific Herald of the International Humanitarian University]. Seriya: Medy`cy`na. Farmaciya. Odesa: Feniks (2011). 2 (ukr).

14. Poltavshhy`na: Ency`klopedy`chny`j dovidny`k (1992). [Poltava region: An encyclopedic guide] / A. V. Kud`ry`cz`-ky`j (Ed.). Ky`yiv: Ukrayins`ka ency`klopediya im. M. P. Bazhana, 33–34 (ukr).

15. Postanova Verxovnoyi Rady` Ukrayiny` «Pro poryadok vvedennya v diyu Zakonu Ukrayiny` «Pro likars`ki zasoby`» vid 4.04.1996 r. # 124/96-VR (1996) [Resolution of the Verkhovna Rada of Ukraine "On the procedure for the enactment of the Law of Ukraine" On Medicinal Products "dated April 4, 1996, No. 124/96-VR.]. URL: <http://zakon2.rada.gov.ua/laws/show/124/96-BP> (ukr).

16. Cherny`x, V. P., Zupanecz`, I. A. & Georgiyancz, V. A. (2000). Practical training at the National Pharmaceutical Academy of Ukraine. Xarkiv: NFAU (ukr).

17. Rozvy`tok ukrayins`koyi medy`cy`ny` i farmaciyi v XIII–XIX stolitti [Development of Ukrainian medicine and pharmacy in the XIII-XIX centuries]. URL:<http://intranet.tdmu.edu.ua>. (ukr).

18. Salo, V. M. (1982). The activities of zemstvos for drug provision of the population. *Farmacija*, 2, 62 (rus).

19. Slipchuk, V. L. (2018). [Trends of professional training of specialists in the pharmaceutical industry in Ukraine (XX – early XXI century). dy`s. ...d-ra ped. nauk: 13.00.04. Ky`yiv (ukr).

20. Slipchuk, V. L. (2017). Professional training of specialists in the pharmaceutical industry in Ukraine (XX – early XXI century). Ya. V. Tsekhmister (Ed.). Kyiv, Ukraine: Edel'veys (ukr).

21. CzDAVO The list of institutions (higher and secondary) that are mentioned in the description header headings. F. 166, op. 1, 224 ark. (ukr).

22. Stanovlennya farmaciyi Ukrayiny` yak galuzi v suchasny`x ry`nkovy`x umovax (1999). [The formation of pharmacy of Ukraine as an industry in modern market conditions]: ` . *Liky` Ukrayiny`*, 7–8, 6 (ukr).

23. Syaty`nya, M. L. (2002). History of Pharmacy: Teach. Manual. L`viv (ukr).

24. Syaty`nya, M. L. (1998). Pharmaceutical business in Ukraine: Past, Present, Coming Day. Ky`yiv: In-t istoriyi Ukrayiny` NAN Ukrayiny` (ukr).

25. CzDAVO Ukrayiny`. F. 4716, op. 1, spr. 1371, ark. 21 (ukr).

26. CzDIAK Ukrayiny` (1908). F. 707, op. 85, spr. 277, ark. 1-3 (ukr).

27. Proner, M. (1925). Reforma studjów farmaceutycznych w świetle postępów nauk przyrodniczych. *Wiadomosti Farmaceutyczne*. Warszawa, 85–87 (pol).