

**EdCW 2020****International Scientific and Practical Conference Education in a Changing World: Global Challenges and National Priorities****CONTINUING PROFESSIONAL EDUCATION IN PHARMACY:  
REALITY AND CHALLENGES**

Tatyana Okonenko (a), Galina Antropova (b), Oxana Fikhtner (c)\*

\*Corresponding author

(a) Yaroslav-the-Wise Novgorod State University, Veliky Novgorod, Russia, Tatyana.Okonenko@novsu.ru

(b) Yaroslav-the-Wise Novgorod State University, Veliky Novgorod, Russia, Galina.Antropova@novsu.ru

(c) Yaroslav-the-Wise Novgorod State University, Veliky Novgorod, Russia, Oxana.Fikhtner@novsu.ru

**Abstract**

In order to increase the efficacy of pharmacists' work in developed countries there are programs of continuing pharmaceutical education (CPE) and continuing professional development (CPD). The concept of *clinical pharmacy* is being introduced in many countries. In our country the system of continuing medical and pharmaceutical education (CMPE) has been created and is being implemented. The paper aim is to study the state and level of additional professional education for pharmaceutical specialists during the transition period from 2017 to January 2021, as well as to assess technologies used when working with pharmaceutical specialists in advanced training courses. This research examines the system of additional professional education for pharmaceutical specialists at Novgorod-the-Wise Novgorod State University (NovSU) in the transition period from the traditional system of advanced training to the continuing education of medical and pharmaceutical specialists. It has been shown that all working programs being implemented comply with Regional Pharmaceutical Association. Programs for pharmaceutical counseling for a particular pathology, including knowledge of etiology, pathogenesis, clinical symptoms of any disease, are being developed. When conducting remote advanced training courses, interactive tools, computer education tools, video conferences are used. Full-time practical seminars are held, the following active methods of teaching adults are applied: a survey seminar, a seminar with individual work, a *round table* seminar.

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## 1. Introduction

In the conditions of an information society when the collectively accumulated scientific knowledge upgrades faster than generations of people change, traditional training systems and technologies can no longer fully meet modern requirements for training specialists in various fields of economy (Donina & Ushakova, 2020), and, above all, in pharmacy as one of the most knowledge-intensive and socially significant field. In various fields of economy there is a shortage of qualified personnel capable of high-quality work in modern rapidly changing socioeconomic conditions.

All this resulted in the need to modernize education in Russia. The aim of reforming is to train specialists with practice-oriented competencies, ready for long-life learning, able to independently solve tasks assigned to them, and generate new knowledge. Training of such specialists is especially important for the pharmaceutical industry, in which professional information upgrades rapidly, the range of problems solved by employees extends, new standards and technologies appear.

The specific of labor activity of pharmaceutical specialists conditions the need of continuing education which required the restructuring of the system of additional professional education (Denisova & Kurilova, 2018). The situation is aggravated by the fact that the quality of medical and pharmaceutical education is not consistent with the international criteria (Svistunov et al., 2014).

To this end, in Russia, within the framework of the implementation of the Federal Law of December 29, 2012, No. 273 “On Education in the Russian Federation”, a system of continuous medical and pharmaceutical education (hereinafter – CMPE) has been created and is being implemented. According to the Federal Law: “The CMPE is additional professional education which is implemented through introduction of programs of advanced training and retraining” (Federal Law, 2012).

Additional professional education of medical and pharmaceutical personnel is aimed at improving the health of citizens of our country, and synchronizing the requirements for training specialists with international standards (Chistyakov, 2019; Nesterenko, 2018; The concept, 2008).

Previously, the advanced training for medical and pharmaceutical specialists was carried out according to the provisions of the Federal Law of November 21, 2011 № 323-FZ “On the Basics of Health Protection of Citizens in the Russian Federation”, obliging them to improve their qualifications as often as once in 5 years with the issuance of a certificate according to the procedure established by the Ministry of Health of Russia (Federal Law, 2011).

## 2. Problem Statement

Between 2016 and January 2021, a pharmaceutical professional could improve his/her qualification in two ways:

- according to Article 69 of the Federal Law “On Basics of Health Protection of Citizens of the Russian Federation” (Federal Law, 2011) from January 1, 2016, after passing a primary accreditation, a graduate of the Pharmaceutical Faculty starts working in a pharmacy, then, within 5-years cycles, he/she improves his/her professional knowledge and skills, and confirms

them, passing a periodic accreditation. The same opportunity could be used by specialists whose certification took place after January 1, 2016;

- specialists who were certified before January 1, 2016 traditionally go through training cycles in the relevant specialty in the amount of 144 hours, and receive a specialist certificate.

Under the traditional system of professional development, medical and pharmaceutical specialists required 144 hours of educational activity in 5 years, while in the system of the CMPE this amount increased to 250 hours, or 50 hours annually. The problem is that these indicators have not been yet fixed at the legislative level. In the Ministry of Health of the Russian Federation they confirmed that the law base of professional development for medical and pharmaceutical specialists has been still developed (Letter from the Ministry of Health of the Russian Federation ПФ, 2017). At the same time, starting from 2021, all pharmaceutical specialists whose certificate or accreditation certificate expires, according to the order of the Ministry (Order of the Ministry of Health of the Russian Federation, 2020), must undergo periodic accreditation and receive an accreditation certificate (the specialist certificate loses its force and is no longer issued).

Similar problems, namely, the training of pharmaceutical specialists, are facing the education systems of other countries. In Europe and the USA, the Continuing Pharmaceutical Education (CPE) and Continuing Professional Development (CPD) programs have been acting for many years (Adhikari et al., 2020) and signify the continuing process of acquiring new knowledge and professional skills during the whole professional life. In our country the similar system being introduced is known as the NMFO (CMPE). One of its tasks is to develop a professional competence.

Given the fact that pharmaceutical specialists are still more medical professionals than businessmen, the purpose of their labor is to provide a proper pharmaceutical care to population. Moreover, throughout the training the practical work should be emphasized (Foppa et al., 2019; Toklu, 2015).

In the United States, the system of continuing professional education for pharmacists has been implemented for over 40 years. In 2017 its results were summed up, and its prospects were considered. According to experts involved in the survey on the results of its functioning, the existing system of continuing professional development improves the indicators of quality and safety of medical and pharmaceutical care to population, but it does not contribute to the appearance of innovations in practice, and does not stimulate a specialist in terms of career growth (Travlos et al., 2017).

In many countries the concept of *clinical pharmacy* is being introduced: after completing the training, pharmacists are engaged by physicians to work on the control of a particular disease. For example, in Turkey, according to the SMART Pharmacist program, after completing the correspondent clinical module, pharmacists were engaged to work with bronchial asthma patients and patients with chronic obstructive lung disease. Pharmacists collected data from 873 patients during their first and second visits, measuring the mean values of peak flow rates, and the mean frequency of using salbutamol per week, as the indicators of the influence of pharmacists' work with patients. A large number of patients demonstrated wrong techniques of inhalation at the first visit. At later stages of the program, the mean values of peak flow rates of patients increased by 63% compared to their first visit. The use of salbutamol

by patients, who improved their inhalation technique, or became more adherent to therapy, decreased by 30%. In Oman, out of 370 patients, the decrease in salbutamol intake per week averaged 50%, and peak flow rates improved by 18%. In Montenegro, based on a sample of 291 patients, 54% of patients had a better asthma control test after the second visit (it should be noted that in Montenegro, a similar collaboration between pharmacists and pulmonologists was initiated by the Chamber of Pharmacists). In some countries, the SMART Pharmacist program is recognized as one of the most important initiatives in the field of pharmaceutical education and practice, markedly supported by national drugs agencies, scientific circles, government and regional offices of the World Health Organization (Rouse & Meštrović, 2020).

In 2018, the CE / CPD national accreditation bodies of Australia, Canada, Ireland, New Zealand, the United Kingdom, and the United States of America developed a unified scheme of accreditation and approaches to the mutual recognition of accreditation results in the field of pharmacy. The stimuli to establish the accreditation system by regulating organs and professionals are to ensure the content accuracy of the training event, increase the efficiency of the training event, and minimize the commercial impact (Baumgartner et al., 2020).

In our country, the Provisor professional standard approved by the Order of the Ministry of Labor and Social Protection of the Russian Federation from March 9, 2016, № 91n indicates the following labor actions: information and consultation assistance in choosing over-the-counter drugs and other pharmacy products, ability to recognize conditions, complaints, which require the medical advice.

Taken into account the above facts, it appears important to study the experience of organizing the system of professional development and the accreditation of pharmaceutical specialists in various countries, in order to form an effective national system of continuing professional training of medical and pharmaceutical specialists.

### **3. Research Questions**

- 3.1. What is the legal framework and regulatory documentation in the field of additional professional education of medical specialists?
- 3.2. What can be useful from the reports of the centre for advanced training of pharmaceutical specialists to increase the effectiveness of the national system of continuing professional education of medical and pharmaceutical specialists?

### **4. Purpose of the Study**

The study purpose is to study the state and level of additional professional education of pharmaceutical specialists in the transition period from 2017 to January 2021, and to assess technologies applied while working with pharmaceutical specialists at advanced training courses.

## 5. Research Methods

To achieve this purpose, the authors studied and analyzed regulatory and legal documentation of federal and regional levels, which determines the state priorities in the field of public health protection, the entire Russian system of education, as well as in the area of development of continuing medical and pharmaceutical education in the long-term perspective.

The research base was educational and methodological complexes of disciplines in the Pharmacy training direction at Yaroslav-the-Wise Novgorod State University, and reports of the Center for Advanced Training of Pharmaceutical Specialists of NovSU for 2017–2020.

## 6. Findings

According to the Federal Law (2012), in the Russian Federation additional education is singled out into a separate educational kind, and provides educational institutions and employers with greater freedom in the area of additional professional education. Law does not require establishing federal state requirements for additional professional programs; therefore, an organization which has a license for educational activities develops and implements them independently. This allows you to quickly ensure the compliance of a specialist's qualification with changing conditions of professional activity and economic situation.

Pharmaceutical specialists carry out various activities, among them work in *social pharmacies*, *hospital pharmacies*, and enterprises of *industrial pharmacy*.

The Pharmaceutical Faculty of the Yaroslav-the-Wise Novgorod State University (NovSU) prepares specialists, mainly for the first two types of pharmacies. Social pharmacies are widespread in Russia, they dispense finished medicines to population, therefore, the employees of these pharmacies must have such professional competence as consulting and informing (National Chamber of Pharmacy, n.d.; Svistunov et al., 2015).

Several exemplary additional pharmaceutical education programs for specialists employed in industrial pharmacy were developed, approved by the Ministry of Health of the Russian Federation.

At the Yaroslav-the-Wise Novgorod State University (NovSU), certification courses for advanced training in the amount of 144 hours in the following specialties have been developed and have been successfully operating since 2013: *Pharmaceutical Technology, Management and Economics of Pharmacy, Pharmaceutical Chemistry and Pharmacognosy, Pharmacy*; retraining courses (504 hours) and cycle of thematic improvement *Rules for Working with Narcotics and Psychoactive Drugs* (72 hours). All educating cycles are performed using distance Internet technologies of the Centre for Distance Learning of NovSU (<http://e-learning.novsu.ru>).

Data on the number of pharmaceutical and medical specialists who completed the advance training courses in the period under consideration at NovSU, given in Table 01, show the growing demand for professional development programs.

**Table 1.** Number of pharmaceutical and medical specialists who completed the advance training courses, persons

| Year | Advanced courses | Professional retraining | Thematic cycle | Continuing Medical Education Courses |
|------|------------------|-------------------------|----------------|--------------------------------------|
| 2017 | 425              | 345                     | 247            | 70                                   |
| 2018 | 516              | 98                      | 772            | 252                                  |
| 2019 | 219              | 22                      | 366            | 114                                  |
| 2020 | 1932             | 0                       | 294            | 202                                  |

As shown by the analysis of the regulatory legal acts of the Ministry of Health of the Russian Federation and the Ministry of Education and Science of Russia (Federal Law, 2011, 2012; Letter of the Ministry of Health of the Russian Federation, 2017), from 2017, retraining is allowed only in the *Management and Economics of Pharmacy* specialty, therefore, in 2018–2020 the number of students in these programs decreased. However, due to the introduction of distance educational technologies into the educational process, e-education is actively used in the system of continuing medical education, this fact making it accessible for specialists of various territorial localization. Thus, the Centre for Advanced Training of Pharmaceutical Specialists of NovSU trains pharmaceutical specialists from the following regions of Russia: Novgorod, Pskov, Leningrad and Tver regions.

Given that the country is developing a system of continuous medical education, in 2017 teachers of the Department of Pharmacy and General Pathology developed five new professional development programs in the amount of 36 hours for specialists who entered this program. The programs are approved by the Ministry of Health of the Russian Federation, their annotations are posted on the portal of continuous medical and pharmaceutical education of the Ministry of Health of Russia. Any specialist registered on the portal, having chosen NovSU, has the opportunity to get acquainted with them, and, having left an application for training and successfully completed training, receive a certificate of advanced training. In 2018 and 2019, 2 new professional development programs have been developed and are being implemented within the framework of the system of continuing professional education.

When choosing topics for programs being developed, international experience and requirements of Russian legislation are taken into account. So, when analyzing the prospects for the continuing professional development in pharmacy, foreign researchers note the need for participation, and the growing role of employer in supporting and conducting training, as well as strengthening interprofessional education and interprofessional practice (Boyle, 2020; Feola et al., 2019; Travlos et al., 2017; Wadelin et al., 2017). So, medical practitioners are engaged in conducting seminars, medical specialists are involved in developing programs, and programs themselves are coordinated with Chairman of Regional Pharmaceutical Association, since professional associations have the right to participate in this process according to Federal Law №323-FZ. Programs of pharmaceutical counseling for a particular pathology are being developed, including knowledge of etiology, pathogenesis, and disease clinical symptoms in them.

When conducting advanced training courses in a distance format, printed materials, video media, computer training tools (computer testing and knowledge control), videoconferences and other interactive teaching methods are used.

However, in our opinion, the complete transfer of additional professional education to a distance format is inappropriate, since in groups there are specialists with different work experience, different ages (from 24 to 65 years). Younger people (before 50 years old) are fluent in computer technologies. People over the age of 50 often have difficulty, when working in an e-learning environment. They often cannot track the appearance of new drugs on the pharmaceutical market and their advantages (disadvantages) in comparison with already known drugs, which are actively announced on the Internet. However, they have a significant practical experience, which helps to solve emerging problems with customers, and they can share this experience with younger specialists in the process of personal communication at advanced training courses. Therefore, holding full-time practical seminars is a necessary component of training.

In our work, we use blended learning technology – an educational approach that combines the participation of a teacher with online learning and involves elements of the learner's self-control of the path, time, place and pace of learning. The following active methods of teaching adults (andragogy) are used: an overview seminar (a research method), role-playing games (a partial search method), a seminar with individual work (a research method), a round table seminar (an explanatory illustrative method), analysis of specific situations (a method of situation analysis).

## **7. Conclusion**

The system of additional professional education in the period of transition to the continuing medical and pharmaceutical education acts within the framework of existing legislation, is aimed at improvement of the competencies of pharmaceutical specialists, takes into account modern requirements for practical activity in constant interaction with representatives of professional associations.

The number of students is stable, which confirms the demand for acting educational programs that widely apply interdisciplinary and practice-focused approaches to the content of educational process, these approaches contributing to the realization of specialists' desire to become highly qualified and competitive employees in the labor market.

The education is aimed at improving professional competencies of specialists, contributes to the expansion of opportunities for increasing the level of pharmaceutical care to customers, which in turn contributes to improved life quality of patients. The further use of the person-centered learning based on information and communication technologies appears promising. Remote advanced training courses require the use of learning elements such as collective (group) interaction, collaborated learning, as well as methods of problem and project-oriented learning.

The use of the traditions of Russian pharmaceutical education, timely responses to the challenges of digital transformation of education and society as a whole, as well as the introduction of the best international practices for training pharmacists will allow forming the effective national system of lifelong learning. Institutional frameworks, a relevant regulatory base and innovative educational technologies will allow Russian graduates of pharmaceutical training directions to become highly qualified specialists as well as produce new knowledge necessary for the industry development.

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