

## EXPERIENCE IN PERSONNEL TRAINING AT THE PHARMACEUTICAL FACULTY OF THE YAROSLAVL STATE MEDICAL UNIVERSITY (FROM A FACULTY TO AN INSTITUTE: A 40 YEARS LONG ROAD)

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The article is devoted to basic historical stages of establishment of the pharmaceutical faculty of the Yaroslavl State Medical University. Contribution of employees to the faculty development has been described. The work on training of the personnel for modern pharmaceutical industry has been shown. The structure of the pharmacy institute newly created on the basis of the faculty and its basic tasks have been provided. Outcomes of the activity of the faculty devoted to training of pharmaceutical personnel are summarized.

**Keywords:** faculty of Pharmacy, students, education, history

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## ОПЫТ ПОДГОТОВКИ КАДРОВ НА БАЗЕ ФАРМАЦЕВТИЧЕСКОГО ФАКУЛЬТЕТА ЯРОСЛАВСКОГО ГОСУДАРСТВЕННОГО МЕДИЦИНСКОГО УНИВЕРСИТЕТА (ОТ ФАКУЛЬТЕТА ДО ИНСТИТУТА: ДОРОГА ДЛИНОЙ В 40 ЛЕТ)

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Статья посвящена основным историческим этапам становления фармацевтического факультета ЯГМУ. Представлен вклад сотрудников в развитие факультета. Показана работа по подготовке кадров для современной фармацевтической промышленности. Приведена структура вновь созданного на базе факультета института фармации, его основные задачи. Подведены итоги деятельности факультета по подготовке фармацевтических кадров.

**Ключевые слова:** фармацевтический факультет, студенты, образование, история

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The faculty of pharmacy has begun its functioning in the Yaroslavl Medical Institute since September 1982. Tension associated with a shortage of pharmaceutical personnel in the Yaroslavl and adjacent regions provided the impetus for the faculty establishment. The faculty was created mainly owing to persistence of the head of the Yaroslavl State Medical Institute Prof. Novikov YuV and Chief of the Pharmacy Management of the Yaroslavl Regional Executive Committee Bredinin LE. Difficult early years were under supervision of Novikov Yu V. In the next 15 years, the faculty owes its development to the head of the Yaroslavl Regional Executive Committee Prof. Pavlov AV.

Prof. Titov NS, MD, was the first dean of the University. He was trying to solve many issues associated with opening of the faculty, including selection of personnel in profile disciplines. Subsequent establishment and development were done with participation of deans Prof. Laypanov AKh (1987–1995 г.) and Prof. Laypanova RYa (1995–2006). Lavrenteva LI, Pharm. D., who graduated from the Pharmacy Faculty, has been Dean of the Faculty since 2006.

Positive traditions in academic, scientific and social life of the faculty have been created by teachers from Kursk, Zaporozhe, Barnaul, and Ryazan. During the initial stage of the faculty development, a significant contribution was introduced

by the first heads of newly created departments such as Prof. Laypanov AKh, Fursa NS, Laypanova RYa, Assistant Professor Vavilov VI. They were directly involved in development of new premises, purchase of equipment and selection of young personnel [1].

Initially, many students were admitted to the faculty (up to 150 people). At that time, employees of the faculty made every effort to improve training quality of personnel, formation and update of directions of scientific activity. During the years of establishment, heads and employees of pharmacy offices of the Yaroslavl, Kostroma, Vologda and other regions provided invaluable assistance to specialized departments. The largest and most innovative pharmacies became the bases for practical classes (head of pharmacy No. 90 Mayfetova AI, head of training and industrial pharmacy No. 160 Ledneva GA). Bases for practical training of students and performance of first theses were represented by other municipal and regional pharmacies and a regional control and analytical laboratory headed by Kliikhovskaya GE, and Yaroslavl Pharmaceutical Factory headed by Shishkin NA.

Skobykino educational and practical base was a base for practical classes in botany and pharmacognosy located on a picturesque bank of the Volga River on the territory of former

dachas of the Yaroslavl regional committees of the Communist Party of the Soviet Union. It is equipped with a pharmacopeial and systematic site where over 500 plants grow until now.

Student's circles are functioning at all specialized departments since the moment of establishment. The most active and worthy participants perform and successfully defend diploma theses. Currently, the majority of teachers from specialized departments are represented by the faculty graduates and active participants of the student research society, whose diploma theses turned into doctoral researches.

The 1990s were not simple for our country. However, the faculty was developed during that period as well. At that time, the first dissertations were defended by the following faculty graduates: Grinenko NA, a student engaged in degree theses from the department of pharmacognosy (in 1992), and Slansky VE from the department of pharmaceutical and toxicological chemistry (in 1994).

The faculty has been international since 1992. Many foreign students (Syrian Arab Republic, Jordan, Kingdom of Morocco, Tunisia, Central African Republic, Republic of Kongo, etc.) have been educated there. The peak in numbers of students from this faculty occurs during this period. In 1997 the first graduation of masters of pharmacy, highly qualified specialists for foreign countries, took place.

The pharmaceutical market was developed due to the need in expansion of educational forms. Long-distance education has been initiated since 2002. There are numerous extension students (their number sometimes exceeded 100).

A great demand for professionals has led to a wide range of students by geography, age and profession [2]. The students included supervisors of pharmacy networks, teachers of colleges and universities, candidate of sciences. Acceptance on part-time study program was over since 2014 due to changes introduced into the Federal State Educational Standard.

However, the issue of deficiency of regional pharmaceutical personnel was still pressing. Considering these requirements, a new form of preparation of specialists with secondary pharmaceutical education (full-time and part-time) was opened in 2011.

In the beginning of the 2000s, pharmacies were the basic area of employment for our graduates. Those who work in this field should follow high professional and moral standards. Thus, from the first days of teaching, significant attention was paid to the issues of professional ethics and deontology and communication skills. The discipline called Basis of Professional Communication was included into the academic process. It was aimed at development of professional communication competence in the area of communication and interaction among the students. In future, it will allow them to perform a professional activity based on the most effective methods and forms of communication [3]. Knowing professional moral, ethical and communicative standards will contribute to constituent examination of specialized disciplines and proper organization of the process of pharmaceutical consultation.

Since 2014, the faculty has initiated the work on preparation of qualified personnel for pharmaceutical industry following adoption of Pharma-2020 state program heading for development and issuance of Russian innovation products [4]. By that time, a number of major projects related to construction of large pharmaceutical enterprises (Nycomed, R-Pharm, Pharmoslav, Vitapharma, Teva, etc.) have been implemented in the region.

During this period, the faculty has been developing ties with pharmaceutical enterprises, which represented the bases for sightseeing, practices and probations for students. New disciplines such as GMP Rules, Pharmaceutical Logistics and Quality Control of Medicinal Preparations have been developed

and implemented into the academic process [5]. As soon as factories have been constructed, the students had a unique possibility to study organization of modern pharmaceutical productions equipped in accordance with GMP requirements. Some practical classes were conducted at the Center of Technology Transfer of Ushinsky KD YSMU. It resulted in consolidation of theoretical knowledge.

Our students participated in the work of PHILIN pharmaceutical international camp, Pharmtech — Technologies of Pharmaceutical Industry exhibition, and — a bit later — at All-Russia GXP-summits and GXP-fests held with an international participation on the annual basis. The activities are aimed at the use of updated good practices in certain production situations and are career-oriented. It allows students to meet potential employees who can, in their turn, offer vacancies to the best students.

The project of All-Russia Pharmaceutical Academic Competitions is initiated under support of the Association of Russian Pharmaceutical Manufacturers. Our students are involved in all six organized academic competitions with successful demonstration of skills and knowledge; they occupy the first place of honor in one of them (Saint-Petersburg, 2015). All these activities became an essential part of preparation of our students to work in the pharmaceutical industry.

The pharmaceutical faculty of the YSMU has become member of the Chemical and Pharmaceutical Research and Educational Medical Cluster since 2017. It enables joint participation in development and implementation of educational and research programs and development of inter-university cooperation with other participants of the cluster.

Guidance counseling is an essential part of the faculty activity. Employees of the YSMU pharmaceutical faculty participated in the All-Russia forums conducted in Yaroslavl many times. Employees and students participated in the work of Health Territory site along with representatives of other educational institutions. R-Pharm was a traditional partner of the site. Schoolchildren learned about pharmacy-associated professions under the guidance of our teachers; they were absorbed in solving real production tasks offered by the faculty teachers.

The faculty employees have been actively involved in Path to Medicine program approved at the University. University Saturdays for schoolchildren of Yaroslavl and master classes are organized within the program. Moreover, excursions for schoolchildren at the University department are being conducted. The One Day at the University project when children can try themselves as students, go to different classes and make something with their own hands is being implemented. The activities do not only introduce schoolchildren to the profession, but also allow to try it. We have been cooperating with school No. 32 for the second year, where the Mendeleev class with in-depth study of chemistry and biology was organized. The Mendeleev camp, which could be attended during the autumn vacation, included visits to the University, meetings with teachers and future employers.

Students meet with potential employers on a regular basis. This year, the Day of Knowledge was organized for the first-year students, when they visited the largest pharmaceutical companies of Yaroslavl.

Approval of up-to-date perspective plans on development of the pharmaceutical branch until 2030 [6] made it necessary to modernize the faculty. In accordance with the order of Khokhlov AL, academician of the RAS and acting rector of the University, the faculty has been transformed into the Pharmacy Institute since September 1, 2022. The basic purpose of establishing and activity of the Institute consisted in compliance with the need of the pharmaceutical branch in highly-qualified specialists mastering

modern and advanced knowledge of the pharmaceutical science, undertaking research and investigation at a high level and implementation of the research results in the educational process. The structure of the institute includes the academic, scientific, organizational departments and Skobykino nursery of medicinal, aromatic and poisonous plants. The educational process is accomplished at 6 departments: department of pharmacology and clinical pharmacology (Prof. Khokhlov AL, Head of the Department and Academician of the RAS), department of management and economics of pharmacy (Assistant Professor Lavrentiev LI, Head of the Department), department of chemistry with a course of pharmaceutical and toxicological chemistry (Assistant Professor Kuznetsova ED, Head of the Department, Assistant Professor Smirnova AV, Head of the Course), and department of pharmacognosy and pharmaceutical technology (Assistant Professor Sidorov AV, Head of the Department).

Moreover, two basic departments were founded to intensify practical education such as the department of innovative pharmacy of the Yaroslavl branch of the Informational and Methodical Center for Examination, Accounting and Analysis of Treatment of Medical Means of the Federal Service for Surveillance in Healthcare and Department of Biotechnology and Industrial Pharmacy based on the Factory of Finished Dosage Forms of R-Pharm. Attraction of highly-qualified practitioners, bringing learning closer to real conditions of practical activity at these departments will promote preparation of specialists with competencies that correspond to modern requirements of the pharmaceutical branch.

The faculty provides preparation of highly qualified personnel (residents, postgraduates), implements programs of additional education (professional retraining, advanced training) in three fields of higher education (Management and Economics

of Pharmacy, Pharmaceutical Technology, Pharmaceutical Chemistry and Pharmacognosy) and secondary education (Pharmacy). The primary and primary specialized accreditation for compliance with professional standards are provided [7,8,9,10]. Since 2016, the faculty has been actively involved in the system of continuous medical (pharmaceutical) education [11]. 15 programs of continuous education used by 3000 of students from different regions of our country have been developed during this period.

The institute is currently involved in preparation of specialists with higher and secondary pharmaceutical education. Activities on licensing of new master programs in Industrial Pharmacy and Biotechnologies are carried out.

In the future, the institute is aimed at subsequent development of material and technical resources, scientific and human resources; access of educational services, scientific development and medicinal preparations to the international level.

Our faculty has introduced a significant contribution to provision of the pharmaceutical branch with highly qualified specialists for 40 years. Over 3 thousand professionals have been prepared during this time. Many of them have become scientists, supervisors of large companies and contribute a lot to the development of the pharmaceutical branch of the country.

Opening and subsequent development of this faculty constituted response to requirements of time. Within the new organizational structure, the institute currently continues preparation of professionals who can solve modern tasks, act under changing social and economic conditions, and use new approaches to solving the tasks faced by the pharmaceutical branch.

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