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THE STATE OF EXTEMPORANEOUS PRESCRIPTION IN UKRAINE AND THE DEVELOPMENT PATHS OF PHARMACY COMPOUNDING

Extemporaneous preparation is one of the components of the pharmaceutical market in European countries with modern developed economies. The compounding of medicinal products in pharmacies is a complex and responsible activity rooted in historical tradition. Pharmacies that produce medicines (compounding pharmacies) are an essential part of the healthcare system because they fulfill a social function in providing medications tailored to individual prescriptions. Extemporaneous formulations meet the specific needs of individual patients, taking into account their personal characteristics [4]. Recently in Ukraine, with the expansion of the range of finished medicinal products (FMP), there has been a trend toward a decline in the competitiveness of extemporaneous dosage forms. As a result, prescriptions are being simplified, and the range of compounded medicines is shrinking. The ongoing competition between pharmaceutical manufacturing and pharmacy compounding in Ukraine does not contribute positively to the development of the pharmaceutical industry [6]. Analyzing international experiences shows that foreign colleagues take a rational and economically advantageous approach to compounding. Importantly, there is broad state support not only for medical and pharmaceutical professionals but also for patients [3,5].

Materials and Methods. The analysis was conducted in pharmacies of the municipal enterprise "Pharmacy" using offline and online surveys among pharmaceutical workers. The software used included Microsoft Excel and Word, as well as their analogs, Google Sheets and Google Docs.

Results and Discussion. In current Ukrainian pharmaceutical practice, the

production of extemporaneous medicinal products (EMP) remains a vital component in treating patients with individualized medications. The legal regulation of this process aims not only to ensure the quality and safety of medications but also to protect patients' rights and uphold pharmacists' responsibilities. Compared to FMP, EMP tend to result in fewer side effects, which positively affects patients health and quality of life. Therefore, reviving extemporaneous compounding (EC) in Ukrainian pharmacies is both relevant and necessary [7].

A recent study of pharmacy compounding in Ukraine showed that the number of pharmacies preparing EC is decreasing. As of the first half of 2025, data from the State Service of Ukraine on Medicines and Drugs Control indicate that 234 pharmacies have prescription-production departments (Fig.1).

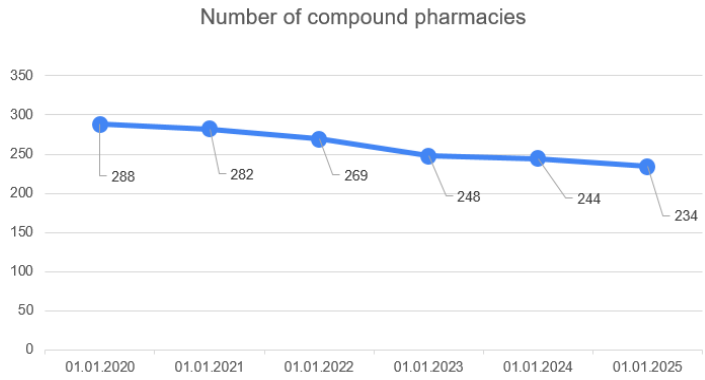

Fig. 1. **Pharmacies producing extemporaneous drugs in Ukraine**

The trend over the past five years is discouraging: from 288 pharmacies in 2020 to only 234 as of January 1, 2025. Contributing negative factors include the COVID-19 pandemic, the ongoing war initiated by the Russian Federation, population decline, pharmaceutical workforce emigration, and declining purchasing power.

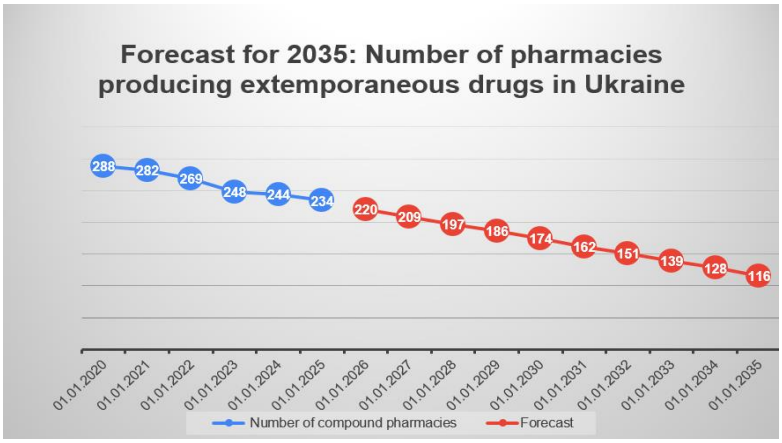

Fig. 2. **Forecast for 2035: Number of pharmacies producing extemporaneous drugs in Ukraine**

As shown in Fig.2, projections suggest that the number of such pharmacies could drop to 116 by 2035. Therefore, it is imperative for healthcare and pharmaceutical professionals to take action not only to preserve historical traditions but also to improve and develop innovative approaches to pharmaceutical compounding in Ukrainian pharmacies. To identify reasons negatively affecting compounding pharmacies, a survey was conducted among 43 pharmacies of the municipal enterprise "Pharmacy" in various regions, including Kyiv. The analysis revealed that the average age of specialists is 55 years, with over ten years of practical experience. There is a shortage of young specialists graduating from pharmaceutical universities. Some pharmacists noted a lack of compounding equipment due to insufficient pharmacy funding, outdated equipment and other factors. According to pharmacists, the main problem is the unwillingness of doctors to prescribe compounded medications, which directly affects the demand for these medicines. Today, pharmacies are mostly places for selling products, that is, a business.

In conclusion, the survey among pharmacists indicates that extemporaneous formulations and prescription practices have remained unchanged for a long time, and physicians are generally unwilling to write compounding prescriptions. It is crucial to direct attention to continuing education for medical and pharmaceutical professionals, drawing from international experience, scientific journals, and online resources, as well as sharing knowledge about pharmaceutical compounding. Young professionals should be engaged in international training and collaborations during their university education to exchange experience as part of Ukraine’s path toward European integration [1,2].

Conclusions. Analyzing international experiences in forming and implementing legislation related to pharmacy compounding may help identify effective practices that could guide improvements in Ukraine. Current research indicates the need to: update and expand the range of EMP; inform medical and pharmaceutical professionals about international knowledge and skills in compounding; work with higher education institutions to implement dual education for pharmacy students; provide comprehensive state support to address pressing issues, including increasing the number of compounding pharmacies producing individualized medications.

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