

## DEVELOPING THE ROLE OF THE ROMANIAN COMMUNITY PHARMACY IN ENVIRONMENTAL PROTECTION

ALEXANDRA TOMA \*, OFELIA CRIȘAN

*Department of Pharmaceutical Legislation and Management, Faculty of Pharmacy, "Iuliu Hațieganu" University of Medicine and Pharmacy, 12 Ion Creangă Street, 400010, Cluj-Napoca, Romania*

\*corresponding author: [toma.alexandra@umfcluj.ro](mailto:toma.alexandra@umfcluj.ro)

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### Abstract

Environmental pollution with medicines is a major problem against which the best solutions are sought, in the context of a risk of contamination present in all activities relating to medicines, including those specific to the community pharmacy. The objective of the paper was to identify the best ways for developing the role of the Romanian community pharmacy in environmental protection. We performed documentary research on the websites of professional associations and pharmacies in Romania to find relevant documents, which we submitted to a thematic analysis. The community pharmacy can contribute to the protection of the environment in many ways, from reducing the waste of medicines, by promoting rational use practices and providing appropriate services for patient adherence to treatment, to collecting waste medicines from the population. In Romania, the community pharmacy is too little involved in environmental protection, therefore proper regulation of its role is necessary, combined with the will of pharmacy owners and professional associations to develop it. The most accessible ways to involve the Romanian community pharmacy include adopting institutional green policies and providing information to the population regarding the best practices for environmental protection.

### Rezumat

Poluarea mediului înconjurător cu medicamente este o problemă majoră împotriva căreia se caută cele mai bune soluții, riscul de contaminare existând în toate activitățile care au ca obiect medicamentele, inclusiv în cele specifice farmaciei comunitare. Obiectivul lucrării a fost de a identifica cele mai bune căi pentru dezvoltarea rolului farmaciei comunitare din România în protecția mediului înconjurător. Am realizat o cercetare documentară pe site-urile asociațiilor profesionale și ale farmaciilor din România, pentru a găsi documente relevante, pe care le-am supus unei analize tematice. Farmacia comunitară poate contribui la protecția mediului înconjurător în numeroase moduri, de la reducerea risipei de medicamente, prin promovarea practicilor de utilizare rațională și furnizarea de servicii adecvate pentru aderența pacienților la tratament, până la colectarea deșeurilor din medicamente de la populație. În România, farmacia comunitară este prea puțin implicată în protecția mediului, fiind necesară nu doar reglementarea adecvată a rolului ei, ci și voința proprietarilor de farmacii și a asociațiilor profesionale pentru a-l dezvolta. Cele mai la îndemână căi de implicare a farmaciei comunitare românești includ adoptarea unor politici verzi instituționale și informarea adecvată a populației privind cele mai bune practici de protecție a mediului înconjurător.

**Keywords:** community pharmacy, professional associations, environmental protection

### Introduction

Environmental pollution with active pharmaceutical ingredients is the object of numerous studies, from the assessment of the medicines impact on the environmental factors to the identification and development of adequate solutions for preventing contamination at all stages of medicines life, issues we have also investigated in our previous studies [36-40].

A domain less researched is the development of environmental protection practices within the activity of community pharmacy. Patient information regarding the environmental risks of medicines and the collection from the population of expired and unused medicines are the most visible actions of community pharmacies in this respect, even though they are not generalized, in some countries being

organized as take back campaigns [1, 2, 9, 10, 36-39]. Although medicines collected from the population are considered wastes, some studies support their assessment in the pharmacy, with the aim to identify and separate those that could be reused, after quality certification by the competent authorities [2, 17]. Also, the analysis and development of specific practices of waste management by the community pharmacy is very important to improve the quality of services to the community [1]. In this sense, it is essential to adopt sustainable business models with "team-based models of care for the good of social and natural environments" [9]. To be successful, a collaboration between employed pharmacists and their employers, respectively between their professional associations is necessary, while the implication in environmental protection of the pharmacy holders may

prove beneficial to their image and client appeal, as well as for community educational purposes [9, 37]. This is why there is a need for institutional strategies of environmental sustainability, including continuing education on environmental protection, measures to reduce carbon footprint, minimization of resource consumption (energy, water, paper etc.), choice of suppliers in favour of those concerned with environmental protection, buying products with reduced impact on the environment (for staff – equipment, tools, devices etc., for patients – medicines, medical devices etc.), implication in environmental public campaigns, provision of sustainable services to the community, especially to protect vulnerable people [8-10, 40]. Public and political debates, including lobbying for the environment, represent other valuable lines of action professional associations of pharmacists and pharmacy owners could undertake [10, 34, 40].

At a global level, the International Pharmaceutical Federation (FIP) supports the implication of pharmacists in environmental protection, mainly by adopting position and guideline papers [19, 20]. Environmental sustainability practices, including for the community pharmacies, have been recommended by FIP since 2015, in the document “Green pharmacy practice – Taking responsibility for the environmental impact of medicines” [20]. More recently, in 2019, the association representing community pharmacists at the European level, the Pharmaceutical Group of the European Union (PGEU), included “supporting and advising on environmental health and safety” among the actions undertaken by community pharmacies with the aim to improve public health by 2030 [25]. This vision was detailed in the policy document “Best practice paper on green and sustainable pharmacy in Europe”, which contains specific recommendations for community pharmacies, with examples of good practices from European countries. The recommendations refer to limiting the negative environmental impact of medicines (through collecting programs and rational prescribing to avoid waste), promoting the prudent use of medicines (through counselling and supporting patients in adhering to sustainable therapies), reducing carbon footprint and improving the health of the planet (through using recyclable materials, renewable energy sources, environmentally friendly procedures related to staff and activities etc.) [24].

In Romania, environmental protection activities carried out by community pharmacies are barely visible, and the implication of professional associations of pharmacists and pharmacy owners has not been studied, as far as we know. The aim of our paper was to investigate to what extent these associations have environmental policies at institutional level and whether they, or their members, have undertaken actions of environmental protection, in order to identify the best ways to develop the role of the Romanian community pharmacy in this field.

## Materials and Methods

To collect information for our study, we performed documentary research [35] on the websites of the professional associations of pharmacists and community pharmacy owners, respectively on the websites of the largest pharmacy chains in Romania.

The professional associations of pharmacists and community pharmacy owners are: Romanian College of Pharmacists – the national organization of pharmacists, with branches in all the counties, which have specific responsibilities of monitoring the quality of professional activities and ensure members’ competences in accordance with the evolution of knowledge and the needs of society [26]; Ethica – an association of independent pharmacies, concerned with the quality of pharmaceutical care and the proper representation of independent pharmacies to the health care authorities [13]; Alphega – an association of independent pharmacies, concerned with the quality of life of the patients and community served by these pharmacies [3]; Association of Pharmacies and Pharmacists of Romania (*Asociația Farmaciilor și Farmaciștilor din România*, AFFR) – which includes family businesses, concerned with the development of pharmaceutical services to the patients and the protection of pharmacists’ reputation [7]; Association of Pharmaceutical Distributors and Retailers in Romania (*Asociația Distribuitorilor și Retailerilor Farmaceutici din România*, ADRFR) – which includes wholesale distributors and three of the largest community pharmacy chains, concerned with the quality and safety of services provided to the patients [6].

The largest community pharmacy chains in Romania in terms of turnover are Dr. Max, Help Net, Dona, Farmacia Tei, Catena, Ropharma, Ducfarm, Mini-Farma, Myosotis, Richter, Remedium, Tri Farm, Marcos Provit, Bucharest Tehnoplus, Medimfarm [11].

Our documentary research on the websites of these associations and companies consisted of seeking information based on the following key terms: environment, environmental protection, pollution, medicines waste, waste collection, sustainability.

The documents retrieved by the search were submitted to a thematic analysis [35], including in relation to the PGEU documents, with a view to identify the environmental policies and practices applied by the pharmacists’ professional associations and community pharmacy owners in Romania.

Starting from the current environment policies and practices, we have elaborated proposals for developing the role of the Romanian community pharmacy in environmental protection, proposals intended for those associations and companies.

## Results and Discussion

Our documentary research has identified several types of initiatives that involve the Romanian community pharmacy in environmental protection: initiatives of the Romanian College of Pharmacists at a national level [27] and at the county level [28, 30, 31]; partnerships between some county branches of the Romanian College of Pharmacists and local authorities [33] and/or environmental organizations [23]; initiatives of the associations of independent pharmacies [5, 14]; initiatives of large pharmacy chains [16, 18, 32, 41]; initiatives of independent pharmacies [16, 21].

At the national level, the initiative of the Romanian College of Pharmacists in 2014 consisted of developing an informative document intended for its county branches, which includes recommendations regarding the management of the collection of unused medicines from the population. These recommendations include measures to prevent contamination of the space and pharmacy staff by placing specific containers for the collection of such waste only in the dispensary, as well as safety and administrative measures, such as verifying the origin of the returned medicines and preparing a handover protocol with information about the patient and the returned medications [27]. This initiative represented a first step through which the Romanian College of Pharmacists got involved in supporting community pharmacists in developing sustainable practices regarding environmental protection. Moreover, the PGEU recommends an active involvement of professional associations in developing informative materials and guidelines regarding the sustainable use of medicines, to reduce waste and, consequently, their impact on the environment [24]. In our previous works, we have proposed ways in which the Romanian College of Pharmacists could further engage in developing green pharmacy practices in Romania [37, 39, 40].

At the local level, we have identified three county branches of the Romanian College of Pharmacists which had environmental protection initiatives. Thus, the Iași branch of the College of Pharmacists had two campaigns of medicine waste collection, between 16 and 18 September 2022 and between 20 and 21 May 2023. At the same time, these campaigns aimed at informing and educating the population regarding the importance of environmental protection by managing medicine waste and drawing the attention of authorities to the lack of legislation in this respect [30, 31]. The Brașov branch of the College of Pharmacists organized a collection campaign of expired medicines from the population during 26-27 October 2019 [28]. Moreover, the Satu Mare branch of the College of Pharmacists was partner in two campaigns of expired medicines collection from the population, one initiated by the Satu Mare Environmental Protection Agency during 1-31 March 2020, the other by the Ecohuman Life

Tree, an ecological and humanitarian association, in the period 15 March 2021 - 15 April 2021 [23, 33]. In all these campaigns the collection sites were established in community pharmacies. The Iași branch of the College of Pharmacists even decided to give continuing education credit points to the participating pharmacists, to encourage their involvement [30]. Also, Ethica Association proved its concern for the environmental protection by initiating a campaign of medicine waste collection in the period 22-31 March 2015, on World Water Day [14]. A similar campaign, called "The pharmacy at home – check" was organized by Dona pharmacy chain, collecting during 18 March – 20 May 2019 seven tons of expired medicines from the population [41]. Activities aimed at collecting expired medicines from the population are constantly organized also by some independent pharmacies in the counties Bihor and Covasna [16, 21].

Such campaigns organized with the help of community pharmacies are highly welcomed and represent one of the most important ways to collect expired and/or unused medicines from patients [24,38]. Community pharmacies are the most accessible units in the Romanian healthcare system, and they can be encouraged and supported, including financially, to carry out such activities, initially in the form of temporary campaigns and later to make them permanent. In fact, permanent systems for collecting medicines waste from the population, involving community pharmacies, are well-implemented in other European countries [1, 2, 9, 10, 24, 36, 37, 39, 40].

Moreover, repetitive or adjacent dispensing of medicines that are not necessary for the patient are practices that can ultimately lead to the accumulation and contamination of the environment with such products [2, 37]. In the context of a significant concern for expanding pharmaceutical services focused on the real needs of patients offered by community pharmacies, including in Romania, sustainable practices can be developed, such as: preventing repetitive or adjacent dispensing of medicines, checking for possible adverse reactions and interactions, providing information and counselling to patients, supporting their adherence to treatment, and monitoring medication therapy [2, 9, 22, 24, 25 ,37]. These actions contribute not only to the judicious management of treatments and the reduction of excessive medicines consumption but also to reducing waste by accumulating unused medicines, which are often not properly disposed of. Even though in Romania, guidelines for the implementation of pharmaceutical services in community pharmacies are still needed, the fact that the regulation of these services has begun demonstrates the Romanian authorities' desire to develop the role of community pharmacies in public health protection, strongly influenced by the quality of the environment.

An unfinished project of the Romanian Parliament, to develop a law on the collection of waste from medicines, has been commented on through statements made by the Bucharest branch of the Romanian College of Pharmacists, as well as by Ethica Association [15, 29]. In our previous works, we have already advocated for the need to develop clear and coherent legislation in this field, with applicable measures for community pharmacies as well, to enhance the role of pharmaceutical units in environmental protection in Romania, based on models existing in other European countries, as exemplified by best practices recommended by the PGEU [24, 36, 39]. Additionally, consultations and debates should be organized among the lawmakers, the Romanian College of Pharmacists, and the associations of community pharmacies owners to find the best ways to organize and manage economically sustainable activities without harming the environment [10, 24, 34, 40].

To increase public awareness regarding environmental protection, both Alphega Association and the pharmacy chain Dr. Max have published informative materials on their websites concerning pollution and its risks on the human body and public health [4, 5, 12]. The PGEU, along with other authors, emphasizes the significant importance of such informational and educational activities for patients, regarding the risks and consequences of environmental contamination with waste from medicines which are not properly disposed of [10, 24, 25]. In our previous works, we have also highlighted that the role of pharmacists, as experts in the field of medications, is essential for developing responsibility towards the environment, fostering the public's concern for its protection, and, consequently, their own lives and health [36, 40]. However, specific training for pharmacists in environmental protection is required, starting from their years of study, with the involvement of the Faculties of Pharmacy and the Romanian College of Pharmacists [39].

Ropharma, the company that owns the pharmacy chain with the same name, has included specific aspects of environmental protection in its activity report for the year 2022. They have outlined measures taken to achieve the objectives set at the European level, particularly the contribution to the circular economy, pollution reduction, and nature preservation. Some of these measures include selective collection of packaging, recycling through contracts with specialized firms for waste recovery, using only recyclable and biodegradable packaging in their operations, replacing old heating/cooling systems with eco-friendly alternatives, delivering medicines using reusable containers, optimizing pharmacy medicine stock based on demand to reduce the quantity of expired medicines and, consequently, their negative impact on the environment [32]. Similarly, the Help Net pharmacy chain also has a policy regarding environmental protection, as indicated

in their own sustainability report for the year 2021. In line with this policy, Help Net pharmacies collect expired medicines from the population, utilize recycled materials (paper, plastic etc.), and attempt to reduce their carbon footprint (*e.g.*, through LED lighting, optimizing the vehicle fleet etc.) [18]. These documents demonstrate a trend of pharmaceutical companies becoming more involved in implementing sustainable practices, by applying different environmental protection measures, not only related to the collection of expired and/or unused medicines from patients. We support such practices, which are also recommended by the PGEU and highlighted by other authors [8-10, 24, 25, 40].

Considering the necessity of developing the role of the Romanian community pharmacies in environmental protection, we believe that a sustained effort from professional associations of pharmacists and pharmacy owners in our country is necessary to design and implement institutional green policies. Such a policy should include the commitment of the association and its members to engage in environmental protection, preventing contamination with medicines and any other pollutants that may arise from pharmaceutical activities. Implementing such a commitment would require reflection on the needs and possibilities for environmental protection, prioritizing action directions based on the availability and accessibility of necessary resources, staff training and implementation of the established actions, monitoring and developing environmental protection practices in community pharmacies, analysing and disseminating the results. In implementing a green policy for community pharmacies, it would be essential to leverage the pharmacist's position in relation to the prescribing physician and the patient. The pharmacist, through his position in this tripartite relationship, could play a much more significant role as an advisor, not only regarding medications, but also concerning the environmental risks associated with them and the available options for prevention or mitigation. Adequate information provided to the population regarding the best practices for minimizing the impact of medicines on the environment is the most accessible way to start. However, this would only be a first step in involving all community pharmacies in Romania in environmental protection.

## Conclusions

There are various ways in which community pharmacies could contribute to environmental protection, as demonstrated by the PGEU policy documents and the research of the practices in different countries, including Europe.

In Romania, environmental practice activities performed by community pharmacies are less visible, as they are sporadic and insufficiently promoted, even on the

professional associations of pharmacists and pharmacy owners. These practices include campaigns of expired medicines collection from the population, publication of informative materials on the impact of pollution on health, and implementation of practices of carbon footprint minimization.

To develop the role of Romanian community pharmacies in environmental protection, it is necessary to adopt institutional green policies at the level of professional associations of pharmacists and pharmacy owners. These policies should prioritize capitalizing on the role of the pharmacist as an advisor on the sustainable use of medicines, to reduce their impact on the environment.

### Conflict of interest

The authors declare no conflict of interest.

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