

EXPANDING COMMUNITY PHARMACISTS' ROLES IN PHARMACOVIGILANCE IN ROMANIA

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Abstract

Community pharmacists are the health professionals that are the most accessible to ambulatory patients, being in the best position to assist them with the safe use of medicines. The aim of our paper was to analyse the legal and professional framework for the community pharmacists' activity in Romania, to identify ways of expanding their roles in pharmacovigilance. To this end, we carried out documentary research and a thematic analysis in comparison with the Best Practice Paper on Pharmacovigilance and Risk Minimisation, which expresses the Pharmaceutical Group of the European Union (PGEU) policy regarding the European community pharmacists' roles in pharmacovigilance. The Romanian standards of pharmacy education and training do not include pharmacovigilance among mandatory disciplines, contrary to the development and complexity of this field. The Romanian legislation acknowledges the community pharmacists' competence, but it does not include all the roles they may play in pharmacovigilance. It only mentions informing patients about risks associated with dispensed medicines, monitoring flu vaccinated patients in community pharmacies and reporting adverse reactions to the competent authority. The ongoing regulatory process regarding pharmaceutical services may be beneficial for expanding the community pharmacists' roles in pharmacovigilance, by setting specific standards for training and monitoring patient treatments. Building up a culture of pharmacovigilance, with expanded roles for community pharmacists, requires patient-centred education and training, legislation to include pharmaceutical services in the health insurance system and standards of professional ethics in pharmacovigilance.

Rezumat

Farmaciiștii comunitari sunt profesioniștii din sănătate cu accesibilitatea optimă pentru pacienții ambulatori, fiind cei mai în măsură să-i ajute pentru utilizarea în siguranță a medicamentelor. Scopul lucrării a fost de a analiza cadrul legal și profesional al activității farmaciștilor comunitari din România, pentru a identifica modalități de extindere a rolurilor lor în farmacovigilență. În acest scop, am efectuat o cercetare documentară și o analiză tematică în comparație cu *Best Practice Paper on Pharmacovigilance and Risk Minimisation*, care exprimă politica PGEU în privința rolurilor farmaciștilor comunitari europeni în farmacovigilență. Standardele naționale pentru educația și formarea farmaciștilor nu recunosc farmacovigilența ca disciplină obligatorie, în contradicție cu dezvoltarea și complexitatea domeniului. Legislația României recunoaște competența farmaciștilor comunitari, dar nu prevede toate rolurile pe care ei le pot avea în farmacovigilență, limitându-se la informarea pacienților în privința riscurilor medicamentelor eliberate, monitorizarea pacienților vaccinați antigripal în farmacia comunitară și raportarea reacțiilor adverse la autoritatea competentă. Reglementarea serviciilor farmaceutice, care este în curs, poate fi fructuoasă pentru extinderea rolurilor farmaciștilor comunitari în farmacovigilență, prin exigențe specifice de formare și de monitorizare a tratamentelor pacienților. Crearea unei culturi a farmacovigilenței, cu roluri extinse pentru farmaciștii comunitari, necesită educație și formare cu centrare pe pacient, legislație de includere a serviciilor farmaceutice în sistemul de asigurare a sănătății și standarde de etică profesională în farmacovigilență.

Keywords: pharmacovigilance, community pharmacists, pharmaceutical services

Introduction

The role of community pharmacists in the health care services for the general population has developed in the recent years, from the mere dispensing of medicines to quality pharmaceutical services aiming at the rational, efficient and safe use of medicines [3, 14, 17, 38, 52, 53]. The increased safety of the medicines for human use was the aim of the European Union (EU) in developing the legislation on pharmacovigilance, during 2010 - 2012, which established obligations in this field, but only for the competent

authorities and the marketing authorisation holders [4, 8, 10, 11, 41-43]. In 2013 however, the Directive 2005/36/EC on the recognition of the professional qualifications was also modified, by adding the following activities that EU pharmacists could pursue: personalised support for patients who administer their medication, contribution to local or national public health campaigns and reporting of adverse reactions of pharmaceutical products to the competent authorities [9, 12]. Though community pharmacists are acknowledged as the most accessible professionals in the health system,

being the best positioned to help patients manage their medication safety issues [2, 14, 19, 20, 28, 35, 38, 52, 53], reporting adverse reactions of medicines to the competent authorities is not a current activity of these professionals [14-17, 20, 52, 57]. Among the reasons put forward are the insufficient training in pharmacovigilance, intricate reporting procedures, limited collaboration with the prescribing physicians, work overload, therefore lack of time for pharmacovigilance, unpaid activity, lack of interconnectivity between the pharmacy management software and the one used for reporting adverse reactions to the competent authority [14-20, 28, 36, 52, 53, 57]. Temporary measures for an improved involvement of pharmacists in adverse reactions reporting are far from sufficient, therefore a sustained approach to achieve a long-term solution is needed. The absence of a pharmacovigilance culture at the level of community pharmacists is an important cause of non-implication, but it may be resolved by organisational and systemic changes, namely political and legal decisions, which would integrate pharmaceutical services into the national health insurance systems, mainly through: patient-centred pharmaceutical education and practice, access of community pharmacists to the patient's medical record and responsibility for the management of the patient's medication, and also payment for the pharmaceutical services that ensure rational, efficient and safe use of medicines [52, 57].

In 2019, the Pharmaceutical Group of the European Union (PGEU) gave some excellent examples of community pharmacists' implication in pharmacovigilance, in their policy document Best Practice Paper on Pharmacovigilance and Risk Minimisation. The PGEU document describes, in the context of the EU pharmaceutical legislation evolution, the roles that community pharmacists could play in pharmacovigilance. Also, PGEU emphasised the necessity of raising the awareness of European and national institutions and authorities regarding the importance of community pharmacists' participation in pharmacovigilance, to help patients manage their medication safety issues: contraindications, precautions, interactions, adverse reactions, errors, duplications, misuse, abuse, non-adherence to risk minimisation measures, treatment failure [38].

In Romania, though the pharmacists' role in pharmacovigilance is less prominent, in the last years there has been a growing concern from the national and professional authorities to establish new rules regarding the services provided by community pharmacists [25-27, 50, 51, 54]. In this context, we believe that it is of utmost importance to include pharmacovigilance provisions into the new regulations regarding pharmaceutical services, in order to implement, on this basis, good practice guidelines for the rational, efficient and safe use of medicines. The aim of our paper was to analyse the legal and professional

framework for the pharmacists' activity in the Romanian community pharmacies in comparison with the PGEU document of reference – Best Practice Paper on Pharmacovigilance and Risk Minimisation, in order to identify ways of expanding the Romanian community pharmacists' roles in pharmacovigilance and raise the awareness of Romanian authorities on the opportunity to increase the Romanian patients' right to safety by using the community pharmacists' competences.

Materials and Methods

To achieve our goal, first, we conducted documentary research [56] to identify and select national legislation and regulations including provisions regarding the implication of community pharmacists in pharmacovigilance, together with relevant education and practice materials issued by the Romanian authorities and professional pharmacists associations. Second, we performed a thematic analysis [56], which included a process of reflection, discussions, investigation and interpretation of the Romanian documents in comparison with the PGEU Best Practice Paper on Pharmacovigilance and Risk Minimisation. During this process, the main themes of the comparative thematic analysis were crystallised, around which we formulated the results and discussion: community pharmacists' education and training, roles in pharmacovigilance and ethics in pharmacovigilance. Third, based on those results, we developed proposals for expanding community pharmacists' roles in pharmacovigilance in Romania, intended for regulatory authorities and professional associations concerned with the rational, efficient and safe use of medicines.

Results and Discussion

Education and training

As stated in the PGEU Best Practice Paper on Pharmacovigilance and Risk Minimisation, "pharmacists are exposed to a unique mix of disciplines during their education and training including scientific, regulatory and clinical elements" [38]. In Romania, the basic elements of pharmacovigilance are taught at the Faculty of Pharmacy in the disciplines of Pharmaceutical and Therapeutic Chemistry, Pharmacology, Toxicology, Pharmacotherapy and Clinical Pharmacy, Pharmaceutical Care, Patient Counselling and Communication in the Pharmacy. In addition, Pharmacovigilance is studied as an individual discipline in the 5th year usually, when students undertake 6 months practical training in a pharmacy, before becoming practitioners. Unfortunately, contrary to the European legislation and practice trends, starting with 2021 Pharmacovigilance lost its standing as a mandatory discipline and became optional, according to the standards set by the Romanian Agency for Quality Assurance in Higher Education (*Agenția Română de Asigurare a Calității în Învățământul*

Superior, ARACIS), which evaluates and accredits university study programs in our country [44].

In our opinion, Pharmacovigilance should be included among the mandatory disciplines of the Faculty of Pharmacy and developed by the introduction of practical applications and simulations, in order to acquaint the future pharmacists with the activities related to the safety issues of the medication taken by the patients. In fact, PGEU, together with the European Association of Faculties of Pharmacy (EAFP), the European Pharmaceutical Students' Association (EPSA), the European Industrial Pharmacists Group (EIPG) and the European Association of Hospital Pharmacists (EAHP) proposed the modification and enhancement of Directive 2005/36/EC, to better reflect the scientific progress of the pharmacist profession. These associations proposed that the set of knowledge and skills acquired during university studies should include, among others, "adequate knowledge and skills on medicines safety in order to manage the appropriate use and risks associated with the use of medicines" and "adequate knowledge and skills to perform clinical risk management on medication use, including the monitoring of dosing, drug-disease and drug-drug interactions and analysing laboratory/clinical data and pharmacovigilance" [39]. We also support this proposal, and, moreover, we suggest that the list of subjects for the training of pharmacist, as in Annex V 5.6.1. of the Directive [9, 39], should include Pharmacovigilance, which would emphasise the importance of training in medicine safety management of all pharmacists, from those practicing in research and industry to those working in community pharmacies.

An example of further and in-depth training in this field in Romania is the Master program in Pharmacovigilance: Monitoring the safety of medicines, provided by the "Iuliu Hațieganu" University of Medicine and Pharmacy of Cluj-Napoca, Romania, since 2013 [49]. This Master program has formed, every year, between 15 and 35 specialists in pharmacovigilance, including community pharmacists, with the aim to improve public health and patient safety in relation to the use of human medicines [18]. Other authors have also demonstrated, by their studies, that further and continuous training in pharmacovigilance is necessary so that community pharmacists may expand their activities of risk management related to the patients' use of medicines and that the reporting of adverse reactions to the competent authorities may become current practice [14, 15, 20, 28, 57]. Some authors have shown the benefits of a good collaboration between physicians and pharmacists for managing issues related to the use of medicines, especially in elderly patients, which would require shared learning initiatives for widening physicians' knowledge [36]. Other authors have maintained that a patient-centred education, including the development of a culture of pharmacovigilance, requires a higher exposure of

pharmacists, ever since school, to the clinical environment, work in multidisciplinary teams, with the presence and participation of patients [52]. We entirely agree with this approach, and we believe that the education and training of pharmacists in Romania need a change of paradigm at the level of the Universities of Medicine and Pharmacy, shifting the focus on the development of pharmacists' abilities to help patients manage the safety of their medication, including through a better cooperation with physicians and other health professionals. For example, within every specialised discipline of the Faculty of Pharmacy, the teaching process should include practical sessions related to the patient, including in community pharmacies and university hospitals, which would imply practical training throughout the academic year. The collaboration between the academic staff, community pharmacists and medical practitioners in charge of the students during these practical sessions is essential for fulfilling these goals.

Roles in pharmacovigilance

According to PGEU Best Practice Paper on Pharmacovigilance and Risk Minimisation, community pharmacists are the most adequate for performing pharmacovigilance activities in order to minimise risks associated with the use of medicines by ambulatory patients [38]. In Romania this is stipulated by Law 95/2006 on health-care reform. Thus, in Title I, on public health, pharmacovigilance is an activity belonging to pharmaceutical care. Also, in Title XIV, on the pharmacist profession, the Law has established since 2006 that the pharmacist, based on academic credentials, is competent to undertake pharmacovigilance activities, while the reporting of adverse reactions of pharmaceutical products to the competent authorities was introduced only in 2016, to transpose the modified provisions of Directive 2005/36/EC [9, 12, 50]. Following the modifications in 2018, the Law no. 266/2008 of pharmacy stipulates that the services provided by the community pharmacists are not limited to dispensing medicines, but also include counselling on their proper and rational use, monitoring their administration, identifying and preventing adverse reactions, in order to ensure the best response to the patients' needs [51]. Moreover, the Order of the Minister of Health no. 444/2019, which set the application rules for the Law of pharmacy, includes pharmacovigilance activities among the community pharmacists' duties [24]. Consequently, Romania has a legal framework acknowledging the community pharmacists' competence in pharmacovigilance and their implication in this field, as a component of the pharmaceutical care meant to improve public health.

Based on the PGEU reference document, the community pharmacists' roles in pharmacovigilance include: preventing, reporting and resolving adverse reactions and other medication-related issues (contraindications, interactions, duplication, abuse, off-label use, errors,

non-adherence etc.); providing advice to special patient population (pregnant and lactating women, paediatric and geriatric populations, driving and operating heavy machinery, concomitant treatment and conditions etc.); supplying medicines reclassified from prescription-only to non-prescription and consultation for their safe, effective and rational use; integrating elements of pharmacovigilance and risk minimization practices into good pharmacy practices, procedures and protocols; ensuring that restricted medicines are supplied in accordance with new regulations; preventing the supply of recalled or withdrawn medicines; disseminating safety alerts concerning medicines to patients and the public [38].

In the Romanian regulations referring to the community pharmacists' roles in pharmacovigilance we have identified rules regarding: preventing, reporting and resolving adverse reactions and other medication-related problems [23, 26, 27, 47], providing advice to special patient population [26,27], integrating elements of pharmacovigilance and risk minimisation practices into good pharmacy practices, procedures and protocols [23, 26, 27, 47] and preventing the supply of recalled or withdrawn medicines, through the applicable procedure according to good pharmacy practice [47].

Thus, during 2010 - 2011, both the Order of the Minister of Health no. 75/2010, which approved the good pharmacy practice rules and the model of procedure for dispensing medicines, elaborated by the Romanian College of Pharmacists in 2011, stipulate the obligation of community pharmacists to inform the patient about the risks associated with the medicines dispensed with or without medical prescription (contraindications, adverse reactions, precautions, interactions) and also to report the adverse reactions to the competent authority [23, 47]. More recently the Order of the Minister of Health no. 2382/2021 has established that the essential service of dispensing prescription medicines, which includes identification and reporting adverse reactions and other medication risks, has as a main objective the patient's increased adherence to treatment and minimisation of adverse reactions [26]. In our opinion, these provisions are not sufficient to develop the community pharmacists' role in pharmacovigilance, as between their duty to inform the patient of the medication risks and their obligation to report adverse reactions to the competent authority there are a few steps toward a complete quality pharmaceutical act. More precisely, community pharmacists should not only inform patients about the risks related to their medicines, but also prevent them, if possible, like for instance make sure there are no contraindications or interactions with other medication or foods. Moreover, community pharmacists should counsel the patient regarding the management of medication risks, mainly adverse reactions, including through appropriate minimisation measures, especially in case of

mandatory additional measures or medicines on the additional monitoring list. It is true that the model procedure of the Romanian College of Pharmacists includes the possibility that community pharmacists follow up the patient through a plan devised in the pharmacy, which records information on the patient adherence to treatment and issues on the medication efficacy and safety [47], but this is not common practice in Romanian pharmacies, unfortunately, rather an exercise for students during their practice [40]. In order to implement into the Romanian community pharmacies current practice the prevention, reporting and resolving adverse reactions and other medication-related issues, our proposal to the Ministry of Health is to add to the rules of good pharmacy practice a chapter dedicated to pharmacovigilance that would establish quality standards for those activities. We also propose that the Romanian College of Pharmacists elaborate models of standard operating procedures for such activities in community pharmacies, plus models of working protocols for the management of specific safety issues. An example of best practice in this respect is given by PGEU, referring to the Irish Pharmacy Union, which developed a protocol to help community pharmacists safely dispense, without prescription, medicines with domperidone, whose use had been restricted [38]. Finally, according to the Romanian College of Pharmacists, detecting prescribing errors is another task to be performed by the community pharmacist [47], not sufficiently explained however in the procedure of dispensing medicines; the ways of preventing other medication errors, related to dispensing and administering medicines, are not included either in the good pharmacy practices, or the procedure models of the professional association. The minimisation of risks related to medication errors or their impact on patient health, especially if entailing adverse reactions or other untoward effects, is also an activity that contributes to quality assurance in the community pharmacy, to be improved not only by training and guidelines, but also by applying modern management methods at organisational level [2, 19, 35] or modern tools for managing patient information, such as the pharmaceutical record, used in France and Belgium and given as examples by PGEU [38].

Regarding the pharmacists' role in advising special patient populations, the Order of the Minister of Health no. 2382/2021 has established that community pharmacists could provide advanced services (including counselling and monitoring to increase patients' adherence, medication safety and efficacy) to the following categories: patients on multiple medication, patients with chronic diseases (hypertension, diabetes, lung diseases, dyslipidaemia), patients under treatment with oral antineoplastics or oral anticoagulants, patients requiring oral emergency contraception and patients wishing to quit smoking [26]. For the time being,

these services are only synthetically mentioned in the Order, their implementation and payment depending on the elaboration and publication of the specific good pharmacy practice guidelines [26]. Those guidelines should set detailed rules for community pharmacists to implement practices with documented efficacy, such as medication review, which “is a structured evaluation of a patient’s medicines with the aim of optimising medication use and improving health outcomes. This entails the detection of drug related problems and recommending interventions” [38]. We consider essential to establish quality standards for the community pharmacists’ activity of monitoring patients throughout their treatments, providing support for responsibly managing their medication safety and reaching expected therapeutic results, especially in the case of a new treatment course [3, 38]; however, it must be accompanied by appropriate training, support and feedback from the professional association for sustainable implementation.

Another advanced pharmaceutical service established by the Order of the Minister of Health no. 2382/2021 is vaccination in the pharmacy [26]. Though the Law of pharmacy mentioned the possibility of implicating community pharmacists in vaccines administration ever since 2008 [51], only in 2022 were the first steps made in this process. Thus, by the Order of the Minister of Health no. 3262/2022, a pilot program was organised and started for vaccinating the population against seasonal flu in the community pharmacies in Romania. The Annex of the Order includes good practice guidelines for community pharmacists, setting rules for pre-vaccination assessment, in order to identify patients at high risk of adverse reactions, rules for patient monitoring and adverse reactions management, including reporting them to the competent authorities [27]. The Order refers to the methodology for surveillance and reporting of post-vaccination adverse reactions elaborated and published by the National Institute of Public Health (*Institutul Național de Sănătate Publică, INSP*), to be observed by community pharmacists trained to administer anti-flu vaccines. Community pharmacists are asked to record all adverse reactions of flu vaccines in the National Vaccination Registry managed by INSP and to report them to the competent authority, the National Agency for Medicines and Medical Devices of Romania (*Agenția Națională a Medicamentului și a Dispozitivelor Medicale, ANMDMR*) [27, 33]. Based on these provisions, it is probable that community pharmacists providing vaccination services will report more adverse reactions than those not providing such services, particularly due to the special training they have received and to regulatory requirements. This is still to be found by future research, but it suggests possible pathways of extending community pharmacists’ roles in pharmacovigilance. A similar situation was

mentioned in relation with pharmacists prescribing medicines in the United Kingdom [52]. Though it is the newest service implemented in Romanian pharmacies, anti-flu vaccination benefits from detailed good practice guidelines, including on pharmacovigilance, which makes us confident in the future regulations, regarding other advanced pharmaceutical services to be provided by Romanian community pharmacists. Regarding the reporting of adverse reactions to ANMDMR, community pharmacists may use the official form for health professionals approved by the Order of the Minister of Health no. 891/2006 [22], while patients may use the form approved by the Scientific Council of ANMDMR no. 11/2015 [32]. These forms, together with detailed information regarding adverse reactions reporting, are available online on the ANMDMR website, to be filled in and sent, or downloaded and sent by regular post, fax or e-mail to the indicated addresses [31]. Transmission is not complicated, but filling in the form by the health professionals requires information and knowledge not only about the medicines, but also the patient, enough time for information collection, assessment and communication with the physician and other health professionals, based on the patient consent. As in other countries [52, 57], neither in Romania do we have a culture of pharmacovigilance and reporting adverse reactions to the competent authorities. We realise that feedback, support and reminders from the authorities would help increase confidence and sustain continuity in pharmacovigilance activities [14-16, 57], but we also believe, like other authors, that specific and experiential training in assessing and classifying adverse reactions, establishing the causality relations between medication and suspected adverse reactions, communicating with patients and physicians, other health professionals and competent authorities are essential in developing this activities of community pharmacists [17, 28, 36, 52, 57]. In fact, the implementation of the pilot program of anti-flu vaccination in pharmacies required mandatory theoretical and practical training of community pharmacists, according to a well-established curriculum that included adverse events management, in order to obtain authorisation for this activity [27]. The programs offered by the Universities of Medicine and Pharmacy were promoted by the Romanian College of Pharmacists, through its website dedicated to pharmaceutical services [48].

This initiative of the professional association follows that of support of pharmacovigilance during the pandemic, started in October 2021, by the call for reporting adverse reactions to COVID-19 vaccines published on its main website front page, linking to the ANMDMR guidelines, including answers and questions for the patients and ways of reporting adverse reactions [21, 45]. These guidelines also helped pharmacists better manage the issues related

to COVID-19 vaccination brought to their attention by patients and to help them report adverse reactions to vaccination. Some authors have shown that sometimes patients describe in blogs adverse reactions they have to medicines, for the purpose of discussion and exchange of experience in a virtual community, but are reluctant to report them officially, at least to a health professional [34]. It may be that some patients don't even know that they could report them to the physician, pharmacist, or directly to the competent authority, and that this would be an extremely important personal contribution to the advancement of knowledge, especially in case of new medicines under additional monitoring, according to European and national legislation [8, 38, 50]. This aspect may be developed if community pharmacists would get involved, for example by mentioning the possibility for patients to contact them and describe their adverse reactions, either by phone or online, in the chat-box in the individual account on the pharmacy website or through other modern tools that use new information and communication technologies [29, 34, 37, 38, 53].

A very interesting project in the field of pharmacovigilance in Romania was the campaign "Safety matters! Report an adverse reaction!", conducted in 2018 by the Ethica group of independent pharmacies in collaboration with the Medicines Information Research Centre (now Pharmacovigilance Research Centre) of the "Iuliu Hațieganu" University of Medicine and Pharmacy Cluj-Napoca, Romania. The campaign included flyers offered freely in pharmacies, forms for adverse reaction reports and articles published in the Ethica Journal – "Your Guide to Health" [13]. We strongly believe that such campaigns should be permanent and carried out at the national level, both by community pharmacists and by competent authorities, through mass media and social media, to educate the population and achieve a sustained long-term positive response.

Considering that PGEU, in its reference document, provides examples of best practices from various European countries, for each of the community pharmacists' roles in pharmacovigilance [38], Romanian authorities and professional associations could use them as models in developing pharmacovigilance regulations and practices for Romanian community pharmacies. For example, the patient electronic record, as stated in Title IX¹ of Law no. 95/2006, can only be accessed by the patient's attending physician [50]. We believe that community pharmacists need to have access to the patient electronic record, to allow them to properly evaluate their medical and medication history, in order to avoid contraindications, interactions, medication errors, duplication or abuse. This is also supported by PGEU through the best practice examples and by other authors who even argue in favour of developing collaboration

guidelines, innovative technologies for professional communication and securing political support for the integration of pharmaceutical services into the health insurance systems [17, 29, 34, 37, 38, 52, 53, 57]. We propose to the Romanian College of Pharmacists, Ethica and other pharmacists associations to undertake actions of raising awareness and advocacy with healthcare authorities, especially the Ministry of Health and the National Health Insurance House, to regulate the access of Romanian community pharmacists to the patient electronic record or at least to the emergency care summary, which would contribute not only to increasing the safety of medication use, but also to reducing costs in the health insurance system, ensuring the continuity of care and a better collaboration with other health professionals, including from hospital, after the patient's discharge [16, 17, 29, 37, 38, 52, 57].

Ethics in pharmacovigilance

Community pharmacists' activity is ruled by a code of professional ethics, whose principal aim is to observe the patients' rights [46]. In a previous study, we have shown that European pharmacovigilance legislation include provisions for the observance of the rights stipulated in the European Charter of Patients' Rights [1, 7]. PGEU does not explicitly mention ethics and patients' rights in the Best Practice Paper on Pharmacovigilance and Risk Minimisation, but they may be deduced from key words such as: preventive measures, access to medicines and care, counselling and information, consent, privacy and confidentiality, quality of care, medication and patient safety, personalised support for patients. Also, PGEU infers the confidence bestowed on community pharmacists, which lies at the basis of the professional relationship with their patients: "Located in the heart of communities, pharmacists often establish long-term relationships with their patients and local populations" [38]. Actually, the Ministry of Health, in the Good practice vaccination guidelines for community pharmacists, considers the "Community pharmacy – an ideal place for vaccination service" [27]. In this context, the Romanian Pharmacist's Deontological Code stipulates the obligation of pharmacists to report to the prescribing physician or competent authorities any adverse reaction of medicines, with the aim to optimise the patient's treatment [46]. Also, the decision to dispense a medicine without prescription, especially in emergency cases, should be made by community pharmacists considering the patient's medical history and the contraindications and adverse reactions of that medicine [23, 46, 47]. Even more so, in such cases, the access to the emergency care summary is imperative, as not only the continuity of access to medicines and pharmaceutical services are at play, but also the very health and life of the patient.

Considering our previous research in this field, we emphasise once again the necessity to enhance and append the Romanian Pharmacist's Deontological Code of 2009, in order to explicitly include the ethical obligations entailed by the expanded roles of pharmacists in monitoring medication safety [5, 6]. We truly believe in the motivational power of professional ethics, expressed by a Code that reflects the evolution of practices and the new conceptual and technological challenges currently at work. For example, as part of a new culture of quality and safety in the community pharmacy, we would need appropriate strategies, such as the implementation of the obligation to report on medication errors that led to adverse reactions on a "no blame" basis; however, to be successful, these must be supported by the employers of community pharmacists [2, 19, 35, 55]. We propose the Romanian College of Pharmacists to evaluate and update the Pharmacist's Deontological Code, considering the evolution of knowledge and the pharmacists' role at the European and global levels.

Since the outbreak of the war in Ukraine, Romania has hosted and accommodated Ukrainian citizens, who need health and pharmaceutical care. Under these circumstances, ANMDMR has published on its website recommendations for reporting adverse reactions for patients coming from Ukraine [30]. It is a touching pharmacovigilance initiative, and also an example of best practice from our competent authority to which community pharmacists are called to rally, as a token of solidarity against the humanitarian disaster on our doorstep.

Conclusions

The evolution of the European legislation regarding pharmacovigilance has led to a remarkable expansion of this activity in the field of human medicine, community pharmacists being able to assume new roles in monitoring the safety of medicines used by ambulatory patients.

The reference document is the Best Practice Paper on Pharmacovigilance and Risk Minimisation, which expresses the PGEU policy regarding the role of European community pharmacists in pharmacovigilance, with examples of these roles in various European countries.

Though Romania has a legal framework acknowledging the competence of pharmacists in pharmacovigilance, the national standards of accreditation of pharmaceutical studies do not include pharmacovigilance as a mandatory subject, in contradiction with the current development and complexity of this field, from the level of the pharmaceutical industry to the community pharmacy. Not only is a change of standards required, but also a shift of the educational and training system, focusing

on the patient and the support provided in the effective and safe management of medication treatments.

Romanian legislation establishes certain duties regarding pharmacovigilance for community pharmacists but does not specify all the roles they might fulfil in this field. The established roles concern informing patients on the risks associated with the use of dispensed medicines, monitoring of anti-flu vaccinated patients and reporting adverse reactions to the competent authorities. Standardisation of advanced pharmaceutical services is a process underway, and it may be fruitful for expanding the community pharmacists' roles in pharmacovigilance, by setting specific requirements of training and monitoring patient medication treatments.

The growing roles of community pharmacists in health care, including through the provision of pharmacovigilance services, also require a reconsideration by the professional association of the deontological norms, namely their optimisation, for suitability to the current conceptual and technological challenges that impact on the pharmacy.

Developing a culture of safety monitoring within the community pharmacy and expanding the community pharmacists' roles in pharmacovigilance would also require a sustained activity of raising awareness and advocacy with healthcare authorities. The adoption of new legal provisions to include pharmaceutical services into the health insurance system and to allow pharmacists to access patient electronic records would really make them members of the multidisciplinary medical team in Romania.

Conflict of interest

The authors declare no conflict of interest.

References

1. Active Citizenship Network, European Charter of Patients' Rights, Basis document, Rome, November 2002, https://ec.europa.eu/health/ph_overview/co_operation/mobility/docs/health_services_co108_en.pdf.
2. Boboia A, Research on applying risk management in the field of quality in order to improve the pharmacy activity. I. Applying quality management methods to highlight the causes that can lead to risks of errors in activities performed by the pharmacist in pharmacy. *Farmacia*, 2019; 67(6): 1106-1115.
3. Chertes A, Crişan O, Standards for good pharmacy practice – a comparative analysis. *Farmacia*, 2019; 67(3): 545-550.
4. Commission Implementing Regulation no. 520/2012 of 19 June 2012 on the performance of pharmacovigilance activities provided for in Regulation (EC) no. 726/2004 of the European Parliament and of the Council and Directive 2001/83/EC of the European Parliament and of the Council. Official Journal of the European Union, L 159/2012.

5. Crișan O, Iacob S, Codes of deontology for health professionals – a comparative analysis. *Farmacia*, 2016; 64(4): 633-642.
6. Crișan O, Iacob S, Romanian code of pharmaceutical deontology – a new conception. *Farmacia*, 2018; 66(1): 187-196.
7. Crișan O, Toma A, Patients' rights in the European pharmacovigilance legislation. In: Pharmacist's role in pharmacovigilance, Editor: Oniga O; "Iuliu Hațieganu" Publishing House: Cluj-Napoca, Romania, 2017; 72-95, (available in Romanian).
8. Directive 2001/83/EC of the European Parliament and of the Council of 6 November 2001 on the community code relating to medicinal products for human use. Official Journal of the European Union, L 311/2001.
9. Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications. Official Journal of the European Union, L 255/2005.
10. Directive 2010/84/EU of the European Parliament and of the Council of 15 December 2010 amending, as regards pharmacovigilance, Directive 2001/83/EC on the Community code relating to medicinal products for human use. Official Journal of the European Union, L 348/2010.
11. Directive 2012/26/EU of the European Parliament and of the Council of 25 October 2012 amending Directive 2001/83/EC as regards pharmacovigilance. Official Journal of the European Union, L 299/2012.
12. Directive 2013/55/EU of the European Parliament and of the Council of 20 November 2013 amending Directive 2005/36/EC on the recognition of professional qualifications and Regulation (EU) no. 1024/2012 on administrative cooperation through the Internal Market Information System ('the IMI Regulation'). Official Journal of the European Union, L 354/2013.
13. Ethica, Adverse reaction reporting campaign, 25.04.2018. www.farmacia-ethica.ro/stiri/campanie-pentru-raportarea-reactiilor-adverse.
14. Fedalto MB, Stumpf Tonin F, Hiemisch Lobo Borba H, Ferreira VL, Correr CJ, Fernandez-Llimos F, Pontarolo R, Pharmacovigilance: an evaluation on the practice of pharmacists acting in pharmacies and drugstores. *Braz J Pharm Sci.*, 2022; 58: e20380.
15. Ferreira-da-Silva R, Alves JM, Vieira C, Silva AM, Marques J, Morato M, Polónia JJ, Ribeiro-Vaz I, Motivation and Knowledge of Portuguese Community Pharmacists Towards the Reporting of Suspected Adverse Reactions to Medicines: A Cross-Sectional Survey. *J Community Health*, 2023; 48(2): 295-308.
16. Fossouo Tagne J, Yakob RA, Dang TH, McDonald R, Wickramasinghe N, Reporting, Monitoring, and Handling of Adverse Drug Reactions in Australia: Scoping Review. *JMIR Public Health Surveill*, 2023; 9: e40080.
17. Hohl CM, Small SS, Peddie D, Badke K, Bailey C, Balka E, Why Clinicians Don't Report Adverse Drug Events: Qualitative Study. *JMIR Public Health Surveill*, 2018; 4(1): e21.
18. "Iuliu Hațieganu" University of Medicine and Pharmacy Cluj-Napoca, Master's degree – Pharmacovigilance: monitoring the safety of medicines. www.farmacie.umfcluj.ro/educatie-farmacia-ro/masterat-fa-ro/master-farmacol-fr.
19. Kaeding M, Schmälter J, Klika C, Pharmacovigilance in the European Union: practical implementation across member states. Springer: Wiesbaden, Germany, 2017; 11-13, 45-99.
20. Li R, Curtain C, Bereznicki L, Zaidi STR, Community pharmacists' knowledge and perspectives of reporting adverse drug reactions in Australia: a cross-sectional survey. *Int J Clin Pharm.*, 2018; 40(4): 878-889.
21. Ministry of Health, National Agency for Medicines and Medical Devices of Romania, Questions and answers guide for patients regarding adverse reactions occurring after the administration of COVID-19 vaccines and how to report them to the National Agency for Medicines and Medical Devices of Romania (ANMDMR). www.colegfarm.ro/userfiles/file/Ghid%20QA%20pentru%20pacien%C5%A3i%20privind%20raportarea%20RA%20vaccinuri%20COVID_V3_28.10.2021.pdf, (available in Romanian).
22. Ministry of Health, Order no. 891/2006 on approval of the Form for the spontaneous reporting of adverse reactions to medicines. Official Journal of Romania, part I, no. 653/2006, (available in Romanian).
23. Ministry of Health, Order no. 75/2010 on approval of the rules of good pharmacy practice. Official Journal of Romania, part I, no. 91/2010, (available in Romanian).
24. Ministry of Health, Order no. 444/2019 for the approval of the Norms regarding the establishment, organisation, and operation of pharmaceutical units. Official Journal of Romania, part I, no. 270/2019, latest consolidated version, (available in Romanian).
25. Ministry of Health, Order no. 644/2021 regarding the testing activity in community pharmacies and rural community dispensaries, using rapid antigenic tests for the diagnosis of SARS-CoV-2 infection. Official Journal of Romania, part I, no. 483/2021, latest consolidated version, (available in Romanian).
26. Ministry of Health, Order no. 2382/2021 on the approval of the Methodology for the implementation of pharmaceutical services and the Nomenclature of pharmaceutical services. Official Journal of Romania, part I, no. 1061/2021, (available in Romanian).
27. Ministry of Health, Order no. 3262/2022 on the approval of the organisation and operation of a pilot program for vaccination of the population against seasonal flu in the community pharmacies. Official Journal of Romania, part I, no. 1031/2022, (available in Romanian).
28. Mokbel K, Daniels R, Weedon MN, Jackson L, A Comparative Safety Analysis of Medicines Based on the UK Pharmacovigilance and General Practice Prescribing Data in England. *In Vivo*, 2022; 36(2): 780-800.
29. Monestime S, Page R, Jordan WM, Aryal S, Prevalence and predictors of patients reporting adverse drug reactions to health care providers during oral targeted cancer treatment. *J Am Pharm Assoc (2003)*, 2021; 61(1): 53-59.
30. National Agency for Medicines and Medical Devices of Romania, Recommendations for reporting side effects after taking a medicinal product for patients coming from Ukraine, 12.04.2022. www.anm.ro/_/

- COMUNICATE%20DE%20PRESA/flyer%20ANMDMR%20-%20side%20effects%20reporting_Ukraina%20-%204%20pagini.pdf.
31. National Agency for Medicines and Medical Devices of Romania, Report an adverse reaction. www.anm.ro/en/medicamente-de-uz-uman/farmacovigilenta/raporteaza-o-reactie-adversa/.
 32. National Agency for Medicines and Medical Devices of Romania, Scientific Council Decision no. 11/2015 on approval of the Form for patient report of adverse reactions to medicinal products for human use. www.anm.ro/en/medicamente-de-uz-uman/legislatie/hotarari-ale-consiliului-stiintific/.
 33. National Institute of Public Health Romania, Methodology for surveillance of post-vaccination adverse reactions. www.cnsct.ro/index.php/metodologii/rapi/3346-metodologie-reactii-adverse-post-vaccinale-indezirabile/file, (available in Romanian).
 34. Nishioka S, Watanabe T, Asano M, Yamamoto T, Kawakami K, Yada S, Aramaki E, Yajima H, Kizaki H, Hori S, Identification of hand-foot syndrome from cancer patients' blog posts: BERT-based deep-learning approach to detect potential adverse drug reaction symptoms. *PLoS One*, 2022; 17(5): e0267901.
 35. Oltean AM, Crişan O, Risk management in preventing medication errors in a community pharmacy. *Farmacia*, 2018; 66(4): 725-732.
 36. Parekh N, Stevenson JM, Schiff R, Graham Davies J, Bremner S, Van der Cammen T, Harchowal J, Rajkumar C, Ali K, PRIME study group, Can doctors identify older patients at risk of medication harm following hospital discharge? A multicentre prospective study in the UK. *Br J Clin Pharmacol*, 2018; 84(10): 2344-2351.
 37. Peláez Bejarano A, Villar Santos P, Robustillo-Cortés MLA, Sánchez Gómez E, Santos Rubio MD, Implementation of a novel home delivery service during pandemic. *Eur J Hosp Pharm*, 2021; 28(Suppl 2): e120-e123.
 38. Pharmaceutical Group of the European Union, PGEU Best Practice Paper: Pharmacovigilance and Risk Minimisation, 06.05.2019. www.pgeu.eu/wp-content/uploads/2019/03/170926-PGEU-Best-Practice-Paper-on-Pharmacovigilance-and-Risk-Minimisation.pdf.
 39. Pharmaceutical Group of the European Union, PGEU, EAHP, EPSA, EIPG, EAHP Statement on future modifications on the Directive on the Recognition of Professional Qualifications. www.pgeu.eu/wp-content/uploads/2019/04/Joint-Statement-on-future-modifications-on-the-Directive-on-the-Recognition-of-Professional-Qualifications.pdf.
 40. Popa A, Briciu C, Activities of pharmaceutical care. In: Pharmacy practice guide for Vth year students, Editor: Popa A; "Iuliu Hațieganu" Publishing House: Cluj-Napoca, Romania, 2023; 67-79, (available in Romanian).
 41. Regulation (EC) no. 726/2004 of the European Parliament and of the Council of 31 March 2004 laying down Community procedures for the authorisation and supervision of medicinal products for human and veterinary use and establishing a European Medicines Agency. Official Journal of the European Union, L 136/2004.
 42. Regulation (EU) no. 1235/2010 of the European Parliament and of the Council of 15 December 2010 amending, as regards pharmacovigilance of medicinal products for human use, Regulation (EC) no. 726/2004 laying down Community procedures for the authorisation and supervision of medicinal products for human and veterinary use and establishing a European Medicines Agency, and Regulation (EC) no. 1394/2007 on advanced therapy medicinal products. Official Journal of the European Union, L 348/2010.
 43. Regulation (EU) no. 1027/2012 of the European Parliament and of the Council of 25 October 2012 amending Regulation (EC) no. 726/2004 as regards pharmacovigilance. Official Journal of the European Union, L 316/2012.
 44. Romanian Agency for Quality Assurance in Higher Education, Specific standards regarding the external evaluation of the academic quality of study programs in order to attain a bachelor's and master's degree in the field of the Specialised Commission no. 12 Medical sciences, updated on 30.06.2021. www.aracis.ro/wp-content/uploads/2021/07/Standarde-ARACIS-Comisia-12-Stiinte-medicale-30.06.2021.pdf, (available in Romanian).
 45. Romanian College of Pharmacists, Covid-19 Vaccines/Report adverse reactions. www.colegfarm.ro/, (available in Romanian).
 46. Romanian College of Pharmacists, Decision no. 2/2009 regarding the approval of the Statute of the Romanian College of Pharmacists and of the Pharmacist' Deontological Code. Official Journal of Romania, part I, no. 490/2009, (available in Romanian).
 47. Romanian College of Pharmacists, Iacob S. (coordinator), Legislation and models of standard operating procedures for applying the rules of good pharmacy practice, <http://colegfarmbv.ro/legislatie/>, (available in Romanian).
 48. Romanian College of Pharmacists, Pharmaceutical services, News. <https://serviciifarmaceutice.ro/>.
 49. Romanian Government, Decision no. 581/2013 regarding the accreditation of master's degree fields, study programs and the maximum number of students that can be enrolled in the 2013-2014 academic year. Official Journal of Romania, part I, no. 500/2013, (available in Romanian).
 50. Romanian Parliament, Law no. 95/2006 on healthcare reform, republished. Official Journal of Romania, part I, no. 652/2015, latest consolidated version, (available in Romanian).
 51. Romanian Parliament, Law no. 266/2008 of pharmacy, republished. Official Journal of Romania, part I, no. 85/2015, latest consolidated version, (available in Romanian).
 52. Rutter P, Brown D, Howard J, Randall C, Pharmacists in pharmacovigilance: can increased diagnostic opportunity in community settings translate to better vigilance?. *Drug Saf*, 2014; 37(7): 465-469.
 53. Spanakis M, Sfakianakis S, Kallergis G, Spanakis EG, Sakkalis V, PharmActa: Personalized pharmaceutical care eHealth platform for patients and pharmacists. *J Biomed Inform*, 2019; 100: 103336.

54. Toma A, Regulations on pharmacovigilance in France and Romania (master's dissertation). "Iuliu Hațieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania, 2022; 23, 39-41, 45-46, (available in Romanian).
55. Toma A, Crișan O, Ethics and business in community pharmacies – A framework for an ethical dialogue. *Farmacia*, 2022; 70(5): 985-990.
56. Tight M, Documentary Research in the Social Sciences. SAGE Publication Ltd: London, UK, 2019; 22-73, 136-143, 158-173.
57. Valinciute-Jankauskiene A, Kubiliene L, Qualitative Study of Community Pharmacists' and General Practitioners' Views toward Pharmacovigilance in Lithuania. *Healthcare (Basel)*. 2021; 9(8): 1072.