



HAL
open science

General Practitioners-Community Pharmacists practice groups: Analysis of the potentialities and limits of this practice through its implementation in several European countries

Florent Macé, Christine Peyron, Carine de Vriese, Marjorie Nelissen-Vrancken, Martine Ruggli, Mélanie Brühlhart

► To cite this version:

Florent Macé, Christine Peyron, Carine de Vriese, Marjorie Nelissen-Vrancken, Martine Ruggli, et al.. General Practitioners-Community Pharmacists practice groups: Analysis of the potentialities and limits of this practice through its implementation in several European countries. 2022. hal-03658918v1

HAL Id: hal-03658918

<https://u-bourgogne.hal.science/hal-03658918v1>

Preprint submitted on 4 May 2022 (v1), last revised 15 Jan 2023 (v2)

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution 4.0 International License

General Practitioners-Community Pharmacists practice groups: Analysis of the potentialities and limits of this practice through its implementation in several European countries

Florent Macé¹, Christine Peyron¹, Carine De Vriese², Marjorie Nelissen-Vrancken³, Martine Ruggli⁴,
Mélanie Brühlhart⁵

¹ Economics Laboratory of Dijon, University of Burgundy, Dijon, France

² Department of Pharmacotherapy and Pharmaceutics, Faculty of Pharmacy, Free University of
Brussels, Brussels, Belgium

³ Dutch Institute for Rational Use of Medicine, Utrecht, the Netherlands

⁴ President of pharmaSuisse, Swiss Society of Pharmacists, Berne-Liebefeld, Switzerland

⁵ Co-head Public affairs of pharmaSuisse, Swiss Society of Pharmacists, Berne-Liebefeld, Switzerland

Auteur correspondant.

Florent Macé

Adresse e-mail : florent.mace@u-bourgogne.fr

Pôle d'Economie et de Gestion - 2 bd Gabriel - BP 26 611 - 21 066 Dijon cedex

Abstract

Practice groups involving general practitioners and community pharmacists have been developed in several European countries (Belgium, the Netherlands, Switzerland) since the 1980s. Each country has implemented this practice using a different model with similarities but also specificities. Each model has encountered different dynamics during its implementation thanks to a significant and even growing participation of professionals in the Netherlands and Switzerland and, to a lesser extent, in Belgium. According to the research that has studied the implementation of these models, the potential of this practice is important in terms of improving the quality of drug prescription and in its cost effectiveness and better collaboration between physicians and pharmacists. However, the parameters associated to individual professionals' practices and to the healthcare system concerned may have influenced the implementation of this practice in these different countries. A generalization of this practice to other countries with similar challenges is appropriate but different considerations linked to the individual practices of professionals and healthcare systems must be analyzed before large-scale implementation is possible.

Key words

Community pharmacist, general practitioner, quality circle, interprofessional collaboration, general practice, primary care organization

Introduction

While practice groups between General Practitioners (GPs) have been established in many European countries, the concept of practice groups between GPs and Community Pharmacists (CPs) has been developed in fewer of these countries ¹. This practice can be defined as meetings between GPs and CPs from the same territory which are regularly organized with the aim of improving the practices associated with pharmacotherapy. However, as each country has different healthcare organizations but also healthcare and pharmaceutical issues, each country has implemented this practice using a different model with similarities but also specificities. Through the study of the implementation of this practice in three European countries (Belgium, the Netherlands, and Switzerland), we analysed what were the potentialities of this practice as well as the levers and limits inherent in each of these countries in order to identify the conditions favorable to the generalization of GPs-CPs practice groups in other healthcare systems. This analysis was carried out through a literature review as well as through feedback from persons attached to the structures supporting this practice in these various countries.

1) Overview of the implementation of this practice in Belgium, the Netherlands and Switzerland

1.1) Establishment and objectives

In Belgium, the Netherlands, and Switzerland, the implementation of practice groups between GPs and CPs has been carried out in different ways according to different associated issues. The Netherlands was the first country where this practice was established by pioneers around 1986, then officially taken over by the government in 1992 under the name of « Pharmacotherapy Audit Meetings » (PTAM)². This practice was introduced later in Switzerland (1997) and Belgium (2000) respectively with the designation « Physician-Pharmacist Quality Circles » (QC) and « Medico-Pharmaceutical Concertations » (MPC) ³. The introduction of these models was supported by different promoters depending on the country. In fact, while the PTAMs and QCs were initially carried by pioneers then supported by a political willingness to rationalize drug expenditures for the PTAMs and by an umbrella organization for Swiss pharmacists (pharmaSuisse), the MPCs were set up by a joint initiative of several professional and institutional structures^a without being initially associated with

^a Scientific Society of Francophone Pharmacists (SSPF), the General Inspection of Pharmacy, the Belgian Center for Pharmacotherapeutic Information (CBIP) and the Scientific Society of General Medicine (SSMG) were the initial promoters

health policies^{2,3}. However, the objective of these practice groups was the same. It was to integrate the expertise of the two professions, through the exchange of information and practices, in order to contribute to an optimization of GPs prescriptions with respect to quality, safety and economy²⁻⁴. Improving relationships between physicians and pharmacists at the local level was another explicit objective pursued by these three models^{3,4}.

1.2) Similarities and differences in the running of practice groups

Each country has implemented this practice using a different model with similarities but also specificities concerning the professionals authorized to lead meetings, support for meeting leaders, integration of prescription data, etc. As mentioned, the general principle of this practice is characterized by organizing regular exchanges between GPs and CPs and even specialists from the same territory in order to exchange scientific, clinical, therapeutic and economic-data, adapted to their daily practice about defined themes²⁻⁶. Depending on the model, the practice groups are made up of 1 to 3 pharmacists and 5 to 15 physicians who meet on average 3 to 6 times a year^{2,5,7}. Moreover, although this is more or less systematic depending on the model, the provision of prescription data from participating GPs is a common feature of these models^{b 2,5,8,9}. These models are also characterized by the support of a supporting structure, whether institutional such as the Dutch Institute for Rational Use of Medicine (IVM)^c for the PTAMs and the National Institute for Health and Disability Insurance (NIHDI) for the MPCs, or professional with pharmaSuisse for the QCs. The purpose of these structures is to accompany professionals in this process through, according to the model, its financing, the provision of prescription data, training of meeting leaders and/or the provision of programs or working materials for the meetings^{2,4,5}. However, these models differ in certain characteristics concerning the setting up of the meetings. Indeed, while the preparation and animation of QCs are exclusively carried out by one or more pharmacists, a joint approach by physicians and pharmacists is planned within the PTAM or MPC models in order to make the meetings more focused on the practical aspects of the two professions^{d 2,4,5}. On the other hand, the methodology of QCs provides for a uniform method for setting up sessions in particular through the preliminary training of meeting leader pharmacists^e, while that of CMPs and PTAMs is more flexible

of this model before its takeover in 2012-2013 by the National Institute of Health and Disability Insurance (NIHDI) to contribute to its development.

^b The provision of prescription data is systematically made available within the QCs while it is not systematically made available within the CMPs and the PTAMs, depending on the quality level of the latter (see comment 6)^{4,8}.

^c IVM is an institute for the proper use of medication that benefits from an institutional grant from the Dutch Ministry of Health¹⁰.

^d However, local CMP project teams can use meeting leaders previously trained (e.g., from programs, but also from other organizations) to lead their meetings.

^e The meeting leader pharmacists must follow a specific continuing education program provided by pharmaSuisse for each topic which includes basic training (50h) followed by continuing training (updates 16h / year) in order to master the topics discussed. Each training includes a broad review of literature associated with the topic discussed.

in terms of preparation methods^f due to a level of requirement and quality that may differ between groups^g 4,5,8. Moreover, the participation of professionals in this type of practice, whether they are meeting leaders or participants, is not recognized in the same way. Indeed, while a maximum budget of 2,500 euros is allocated per MPC to finance the entire local project, only some professionals are paid within the other two models, meeting leader pharmacists under certain conditions within the QCs^h and participants involved in the higher-level groups for some PTAMsⁱ 9. Likewise, CPs and GPs can have their participation in these three models recognized within their continuing training but through specific modalities in each country 3. Table 1 describes more explicitly the similarities and differences between these different models.

1.3) The situation of the current implementation of this practice in these countries

Due to a different anteriority and a distinct dynamic, the implementation level of these practice groups is currently different in the three countries analyzed. In the Netherlands, this practice was rapidly and noticeably established among GPs and Dutch CPs 2. Thus, since 1995, almost all Dutch GPs and CPs (up to 95%) participate in these practice groups, which would represent more than 800 PTAMs in 2022 2,7,8. In 2022, there are about one hundred QCs (which represent approximately 800 physicians and 100 pharmacists), established in Switzerland, but they are not homogeneous throughout the country^j 11. Compared to the Netherlands, the participation of professionals in QCs is lower but the figures illustrate a growing and consolidated presence in certain cantons where this model has been established since its beginnings (for example Canton of Vaud)^k11. In Belgium, with only 386 local projects approved since 2015, while the budgets allocated to its financing were planned to support 800 local projects per year until the end of the year 2018, the development of CMPs seems modest 12. Moreover, this model seems to have different dynamics between the French and Dutch-speaking parts of the country with a more developed implantation on the Dutch-speaking side where the establishment of 322 local projects has been recorded since 2015, against respectively 48 and 16 in the French-speaking part and Brussels area.

^f The preparation of the sessions depends on the topics and the tools available for their realization. These tools can be prescription data from GPs but also working materials (powerpoint, etc.) which are made available to meeting leaders, whether by IVM for PTAMs or by promoters of quality promotion programs whose programs have been previously validated by NIHDI for MPCs.

^g For the PTAMs, the quality level is classified into four levels. It is assessed by IVM using six criteria: number of PTAMs performed, average duration of meetings, joint preparation of CP and GP, use of prescription data, drafting of agreements on the choice of drugs, verification of adherence decisions made with prescription data 8. Not all groups are assessed annually. Some groups that operate at a higher level (Level 4) and are paid annually by certain health insurers, are only reviewed once every two or three years.

^h In order to be paid, each meeting leader pharmacist must meet several conditions such as leading at least 3 meetings per year, integrating GPs' prescription data, making an annual report, etc.

ⁱ Not all higher level groups are paid. Only groups that have (a majority of) patients from certain health insurers are paid.

^j Indeed, after being introduced in a few cantons, this model has gradually spread throughout Switzerland, mainly within the Roman cantons but also within Italian and even German-speaking parts of Switzerland. In the German-speaking part, this practice is very little developed (less than 5 QCs), this can be explained by the existing competition between GPs and CPs within this region where GPs have also the right to dispense medication.

^k Indeed, most of the QCs are located in the French-speaking part of Switzerland, where in 2019 in the canton of Vaud, nearly a third of the QCs were counted (30 QCs including 228 physicians and 34 pharmacists) 11.

2) Results in terms of prescriptions and pluriprofessional relationships

These practice groups have been evaluated using 3 main outcome criteria: the quality of drug prescription, its cost effectiveness and the collaboration between GPs and CPs.

2.1) *Regarding the quality of drug prescription*

Studies on the implementation of these three models have highlighted an overall positive effect of this practice on the quality and safety of drug prescription by the participating GPs, in particular in relation to the choice of drugs prescribed. These studies show that these practice groups have contributed to improving the quality of drug prescription for specific pharmacotherapeutic management, such as reducing the use of benzodiazepines or prescription antibiotics more appropriately for respiratory disorders in adults and adolescents (in the Netherlands)^{13,14}, or in managing cardiovascular diseases or diabetes (in Switzerland)^{3,15}. Moreover, even if not all the studies are consensual concerning the correlation between the quality level of PTAMs and the quality of the prescription, it appears nevertheless that the PTAMs contribute globally to an improvement of the quality of drug prescription by the GPs involved, especially if the quality level of PTAM is high^{8,16-20}. Although the Belgian model has not been extensively studied on this issue, the only published study showed that this model has led, for some of these groups, to the elaboration of consensus, such as the notification of kidney function on prescriptions^{1 12}. However, although most of these groups did not consider tracking the effect of this consensus on practice, these results nonetheless show a first step that could contribute to an improvement in the quality of prescription of the participating GPs¹².

2.2) *Concerning to the cost effectiveness of the prescription*

The most convincing results in terms of medico-economic efficiency, were highlighted by studies which evaluated the Swiss QC model. The last evaluation conducted between 1999 and 2010 noted that QCs contributed to a significant reduction in the cost of prescription with a 40% difference in annual drug costs per patient for physicians involved in QCs^{m 15}. In 2016, the savings made with the QCs were evaluated at 27 eurosⁿ for a patient followed by a physician member of a QC⁶. This represents a saving of 40 735 euros per physician per year. Extrapolating this figure to all GPs working in Switzerland (around 21,000), the potential savings would be approximately 855 million euros per year⁶. A study financed by a fund for joint quality (pharmacists-insurers) is currently planned in Switzerland in particular to assess the effectiveness, economics and adequacy of QCs. In

¹ The notification of kidney function on prescriptions was in particular part of one of the measures agreed between participants in order to inform the CP of the patient's kidney function during dispensing¹².

^m This evaluation focused on the overall cost of expenses incurred per patient as well as those relating more specifically to five pharmacological classes from the category of cardiovascular drugs, in particular with regard to the level of generics and the choice of molecules¹⁵.

ⁿ In this article, we have used the conversion of the beginning of the year 2022 which is 1 euro = 1.03 CHF to express the amounts mentioned in the Swiss evaluations.

the Netherlands, there are no large-scale studies demonstrating economic advantage from the creation of PTAMs. However, data indicates that the implementation of this model has allowed some territories to decrease their health expenditures, for example the city of Asten (about 16,000 inhabitants) where the expenditure for drugs in primary care was lower by 600,000 euros in 2018, than what would be expected for a community of the same size ²¹.

2.3) Concerning the collaboration between physicians and pharmacists

The satisfaction of the professionals, meeting leaders or participants, has been demonstrated by various studies, particularly with regard to the improvement of the collaboration between the physicians and pharmacists who participated in these groups. These studies showed an increase in satisfaction and an enrichment for physicians and pharmacists who work together in this practice ^{2,6,12}. Thus, these studies have shown that this practice has contributed to improving their relationship through better mutual knowledge, a better understanding of the way in which tasks should be shared between them, as well as an enrichment of their professional practices ^{2,6,12}. CPs, for their part, mentioned that they were much more likely to contact a GP when they had a question ². In a survey carried out in November 2017 in Switzerland, a large majority of the meeting leader pharmacists (84%) considered that it was worth setting up QCs because even if the investment in time was important, it allowed them to improve patient care (70%) while increasing collaboration with physicians (88%) ⁶.

The evaluations carried out during the implementation of this practice with regard to these three models have led to positive results concerning these three criteria. However, each model has faced or is currently facing different challenges in terms of development or maintenance. These challenges may be specific, related to the particularities of each of these three healthcare systems, but they may also refer to the barriers (and levers) that any implementation of these practice groups might face.

3) Analysis and perspectives of generalization in other countries

The cross-analysis carried out between the dynamics encountered by these three models with their own characteristics and those of their implementation context allows us to identify the factors that may have facilitated or limited the implementation of these models, whether they are related to the individual practices of professionals or to the context of the country of establishment.

3.1) Barriers and levers associated with the individual practices of professionals

Whether it is the meeting leaders or the participants, various factors associated with the individual practices of these professionals can condition their adherence to this practice. These factors include the suitability of this practice to their needs and expectations, the integration of this practice into their respective availability, but also the consistency of this practice with their professional logic.

The response to the expectations and needs of the participating professionals, both in terms of enrichment of their practice and in terms of improving collaboration between physicians and pharmacists are factors that have allowed the implementation of these models, more particularly in the Netherlands and Switzerland ^{2,6}. Indeed, the constitution of groups integrating professionals from the same territory as well as dealing with topics related to the current practices of professionals or public health campaigns in the country has facilitated the implementation of this practice. However, depending on the anteriority of the model, the expectations of professionals seem to evolve. First, the participants seem to seek to improve communication with others professionals and exchange about medical information and their prescribing behaviour, then aim to implement effective measures within their respective practices ^{2,12}.

On the other hand, the modalities of implementation of these models being different, both in terms of the frequency of the meetings and the preparatory methods, the availability of the professionals may represent a limit to the integration of this practice. Indeed, while the contribution of the participants is rather modest because mainly represented by their simple participation in the meetings^o, that of the meeting leaders is much more important^p and may represent a limit to the implementation of this practice. The role played by the supporting structure is then all the more important in order to facilitate the setting up of meetings, notably by accompanying the meeting leaders, by the provision of various tools (prescription data, working materials, training modules for meeting leader pharmacists, etc.) ^{2,4,5}. Moreover, the initial accompaniment of Dutch professionals by advisers attached to IVM, at the time of the establishment of the PTAMs, were measures that facilitated their establishment and could be one of the possible levers for the development of MPCs in Belgium if the same arrangements could be made ².

Furthermore, consistency between the involvement of professionals in this practice and the modalities put in place to recognize this involvement is another parameter which may encourage professionals to participate to this type of practice. Indeed, in the countries where the majority of these professionals are self employed, the recognition of their participation, whether financial or as a professional, is one of the factors that can facilitate their participation in this practice. So, although there was funding from

^o Regarding the participants of these 3 models, it is not generally expected that they perform work for the preparation of meetings which generally take place over a period of 2 hours. However, for PTAMs for example, depending on the topic, participants sometimes need to do homework that can vary from preparing prescribing data from their own information system, researching specific patients, collecting information materials to following an online training before the meeting. In addition, meeting leaders differ between meetings. So each participant prepares a meeting once in a while (pharmacists more often than GPs).

^p The preparation time for a session depends on the subject, the meeting leader and the preparation methods for the session (provision of prescription data, working materials, etc.). Thus, according to pharmaSuisse, it takes about 40 hours to prepare a QC meeting. For PTAMs, the results of a recent survey conducted by IVM in 2019 reported that the average preparation time was: 1-2 h (15%), 2-3 h (26%), 3-4 h (27%), >4h (30%). Although official information could not be provided by NIHDI on this subject, it would seem that the hourly volume associated with the preparation of a MPC is similar to that associated with the preparation of an PTAM meeting.

health insurers at the beginning of the PTAMs^q, the non-systematic funding of professionals doesn't represent a totally limiting factor with regard of the current implementation of this practice in the Netherlands.

3.2) Barriers and levers associated with the context of the country of implementation

The context within the country of implementation may also influence the setting up of this practice because of the type of the GPs and CPs practice, the healthcare and professional policies led in this country as well as the links between professionals and funders.

First, a primary health care organization such as the one in the Netherlands, in which the majority of GPs participate in peer groups, practice in group structures^r and work with the expertise of the pharmacist, is a favorable context that can promote the implementation of this practice, explaining in part the rapid and significant implantation of PTAMs in the Netherlands^{1,7,22}. On the other hand, the characteristics of the Belgian primary healthcare organization where most GPs still practice alone^s and CPs do not contribute enough to new services as they use all of their expertise in patient care (medication review, service for asthma patients) represent a limiting context for the development of MPCs in spite of the development of coordinated exercise in this country^{1,22-25}. Thus, the collaboration between Belgian GPs and CPs seems not to be very developed, each profession seeming to want to free up time for its own activity to the detriment of the time available for this type of collaborative practice. Moreover, the observation of an implementation with opposite dynamics in different regions of the same country, as is the case in Switzerland and Belgium, may explain or suggest that differences in professional practices between regions (interprofessional practice, dispensing medication by GPs in German-speaking part of Switzerland, etc.) may condition the implementation of these practice groups in the same country.

The healthcare and professional policies that tend to define the place of the pharmacist and of their practice in primary health care are also parameters that may condition its implementation. Indeed, historically focused on the preparation and dispensing of drugs, the pharmacist's missions in all these countries have evolved towards the concept of pharmaceutical care which represents an activity more focused on pharmaceutical expertise towards the patients and the physicians. Thus, anteriority of the political measures taken to legislate this evolution as well as its effective evolution within these countries may have conditioned the implementation of these models, notably through a practice of pharmaceutical care much older and developed in the Netherlands than in Belgium^{7,23}. In addition, the willingness of pharmaceutical professional organizations, such as pharmaSuisse, to promote this

^q In the early years of PTAMs, all participants received a financial incentive from health insurers to stimulate their participation. This incentive consisted of compensation in the form of a small fixed annual amount for each patient.

^r In the Netherlands, 90% of Dutch GPs work in medical practices or health centers¹.

^s Despite the evolution of the mode of practice of Belgian GPs, the majority of Belgian GPs still practice in a solo exercise (60% in 2015 versus 70% in 2007)^{1,22}.

practice in Switzerland by its development and a rigorous evaluation, has allowed this practice to be recognized by politicians and funders and to be integrated into Swiss policies, using the expertise of pharmacists in the search for efficiency in its healthcare system. In Belgium, the support of professional institutions such as the SSPF for the preparation and the animation of meetings, the development of the financing of MPCs by the NIHDI and the recent legislation governing their implementation (2015), are also measures that illustrate the professional and political willingness to develop this model in Belgium^{9,26}. However, the non-systematic provision of prescription data during these meetings, which makes it difficult to measure the impact of CMPs, and the fact that priority is given more to exchanges between physicians and pharmacists rather than to the expected results, seem to lead to a less ambitious policy orientation towards this practice in Belgium. In the Netherlands, public policies have accompanied the development of PTAMs and still consider PTAMs as an important tool for optimizing drug therapy. So, the government still finances the development of independent working materials to which the Dutch College of General Practitioners and the Royal Dutch Pharmacists Association contribute. These professional institutions promote PTAMs because they see PTAMs as an important tool for the implementation of their guidelines (concerning pharmacotherapy) and as an implementation tool for successful interventions in primary care. In addition, PTAMs are also part of the training program for pharmacy students and to a lesser extent for medical students in general practice (depending on the university).

As mentioned previously, the funding of professionals who participate in practice groups is a parameter that can facilitate their implementation. However, the relationship between funders and professionals, depending on the nature of the funder, may be able to condition the implementation of this practice within a healthcare organization. Indeed, depending on the country, the financing of professionals for their practice can be undertaken by a state organization (as in France for example) or entrusted to health insurers, as is the case for the three countries we are studying. However, based on these three examples, the nature of the funder does not seem to lead to the same objectives and the same issues for professionals. Indeed, the remuneration of professionals by health insurers for their contribution to practice groups has contributed to introduce financial incentives for professionals in return for more selective measures. The remuneration of participants in some higher-level PTAMs as well as that of meeting leader pharmacists who fulfill the pre-established conditions are examples of this. This negotiation relationship between health insurers and professionals requires pharmaSuisse to assess the medico-economic efficiency of the QCs practice in Switzerland in order to negotiate the remuneration of meeting leader pharmacists and to make the model sustainable. These negotiations are all the more difficult as pharmaSuisse is currently encountering difficulties in obtaining good quality medico-economic data, that can be easily manipulated and discussed by the QCs. On the other hand, the financing of this practice by a public body responsible for the general management and control of healthcare insurance through the NIHDI in Belgium, has led to the implementation of strategies

intended to be less intrusive and more incentive based for all professionals, as is the case with the funding of local projects with less significant counterparties than the previous examples. These examples underline that the relationship between funders and professionals is a parameter that can influence the implementation of this practice because it will not generate the same objectives and the same issues for professionals.

3.3) Perspectives of generalization to other countries

The impact of drug expenditure and the proper use of drugs are important issues in many developed countries. In addition, healthcare organizations in most countries are currently moving towards an increasingly coordinated exercise. Thus, as illustrated above, this type of practice, through its effects on the quality of drug prescription, cost effectiveness and collaboration between physicians and pharmacists, represents a potential for these healthcare organizations to respond to these different challenges. However, this practice cannot be generalized without taking into account the specificities of each country beforehand. Indeed, multiple factors associated to individuals' professional practices such as how this practice answers their needs, their availability and their professional logic, as well as those related to the context of country, such as the mode of practice of professionals, health and professional policies and the links between professionals and funders, can condition the implementation of this type of practice. Thus, a generalization of this model to other countries is entirely appropriate, but these considerations must be taken into account because they can represent both levers and barriers to the implementation of this type of practice. Thus, before considering a larger scale implementation in other country, setting up an experiment, which was the case recently in France, is an essential step in order to analyze the appropriateness of the model implemented and the specific limits of the healthcare organization in order to facilitate its further development ²⁷.

Conclusion

Through this analysis, we can say that group practices between GPs and CPs have been established with different modalities and dynamics in the three countries we have just studied. We can emphasize that this practice has been implemented successfully more particularly in the Netherlands and Switzerland where we can see an important or increasing participation of GPs and CPs. However, although the modalities which contributed to the implementation of these models present similarities but also differences, the general results of this practice have been positive, particularly in terms of quality of drug prescription, cost effectiveness and improving physician-pharmacist collaboration. Despite these encouraging results, various parameters associated to the individual practices of professionals or the context of the country are likely to condition its implementation. Thus, before considering a generalization of this practice in other countries, all these considerations must be taken into account in order to facilitate its implementation.

Acknowledgements

The authors gratefully acknowledge IVM, NIHDI and the INNOVATION department of pharmaSuisse for providing information and data on the three respective practice group models.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

This work was supported by a French government grant managed by the French National Research Agency under the programme 'Investissements d'Avenir' with reference ANR-11- LABX-0021 (Lipstic Labex) ; the French Institute for Public Health Research (IReSP) ; and the Unity of Continuing Professional Development in Healthcare from the University of Burgundy (UMDPCS).

	Belgium	The Netherlands	Switzerland
<i>Profession of meeting leaders</i>	General practitioners (GP), Community Pharmacists (CP)	General practitioners, Community Pharmacists	Community Pharmacists
<i>Profession of participants</i>	GPs, CPs and even hospital physicians and pharmacists	GPs, CPs and even hospital practitioners Depending on the subject, participants can be for instance also practice nurses, specialists geriatric medicine, district nurses.	GPs, CPs and even physician specialists in internal medicine and pediatricians
<i>Average number of participants</i>	We do not have precise data but we can suggest 2 to 3 CPs and 5 to 15 GPs	2 to 3 CPs and 7 to 10 GPs	1 to 3 CPs and 5 to 15 GP
<i>Supporting structure</i>	NIHDI	IVM	pharmaSuisse
<i>Topic discussed</i>	Topics based on quality promotion programs validated by the NIHDI	Free choice of subjects, although most PTAMs groups choose topics that are related to new/renewed guidelines of the profession.	Topics on the themes of the training modules, whose the number of these is significant
<i>Average frequency of meetings</i>	No fixed frequency	4 to 6 per year	3 to 4 per year
<i>Duration of meetings</i>	2 h on average	1,5-2h on average	2 h on average
<i>Preparatory methods of meetings</i>	Joint preparation by a GP and a CP but possible contribution of other trained meeting leaders	Joint preparation by a GP and a CP	Preparation by one or several pharmacists
<i>Provision of prescription data during sessions</i>	Possible but not systematic, at the request of meeting leaders	This depends on the quality level of the PTAM (mainly levels 3 and 4)	For every QC
<i>Financial recognition</i>	Budget allocated per MPC	All professionals (participants and meeting leaders) involved in certain higher-level PTAMs (level 4)	Only for meeting leader pharmacists who fulfill the pre-established conditions
<i>Professional recognition</i>	For GPs and CPs	For GPs and CPs	For GPs and CPs

Table 1 Comparison of the characteristics of different models of General Practitioners-Community Pharmacists practice groups

Bibliography

1. Rohrbasser A, Kirk UB, Arvidsson E. Use of quality circles for primary care providers in 24 European countries : an online survey of European Society for Quality and Safety in family practice delegates. *Scand J Prim Health Care* 2019; 37: 302–311.
2. Kocken GA. Medication discussion groups in the Netherlands : Five years of experience. *Med Educ* 1999; 33: 390–3.
3. Rédaction Prescrire. Cercles de qualité médecins-pharmaciens suisses : intérêt confirmé. *Rev Prescrire* 2008; 28: 542–544.
4. Institut national d'assurance maladie-invalidité. Concertation médico-pharmaceutique, <https://www.riziv.fgov.be/fr/themes/qualite-soins/medicaments/concertation-medico-pharmaceutique/Pages/default.aspx#.WjfYB2eWwdV> (2020, accessed 15 December 2020).
5. Bugnon O, Jotterand S, Niquille Charrière A, et al. Cercles de qualité médecins-pharmaciens, pour une responsabilité partagée de la liberté de prescription. *Rev Médicale Suisse* 2012; 8: 1042–1048.
6. Philbet T. Cercles de qualité médecins-pharmaciens. Déjà 20 ans, mais toujours aussi innovants. *pharmaJournal* 2018; 44–46.
7. Foppe van Mil J. Pharmaceutical Care in Community Pharmacy: Practice and Research in the Netherlands. *Ann Pharmacother* 2005; 39: 1720–1725.
8. Teichert M, van der Aalst A, de Wit H, et al. How useful are prescribing indicators based on the DU90% method to distinguish the quality of prescribing between pharmacotherapy audit meetings with different levels of functioning? *Eur J Clin Pharmacol* 2007; 63: 1171–1177.
9. Ministère des Affaires sociales et de la Santé publique. Arrêté royal du 03 avril 2015 fixant les conditions et les modalités de la mise en oeuvre de la concertation médico-pharmaceutique, http://www.ejustice.just.fgov.be/cgi_loi/change_lg.pl?language=fr&la=F&table_name=loi&cn=2015040312 (2021, accessed 1 October 2021).
10. Instituut Verantwoord Medicijngebruik. Informatiepagina over IVM, <https://www.medicijngebruik.nl/over-ivm> (2021, accessed 30 September 2021).
11. Herzig L, Niquille A. Cercles de qualité : pour optimiser la prescription médicamenteuse et l'interprofessionnalité?, <https://www.svmed.ch/svm/wp-content/uploads/2019/10/forum-svm-svph-atelier-cercle-de-qualite.pdf> (2019, accessed 15 December 2020).
12. Damiaens A, Fraeyman J, Fakroune S, et al. General practitioners and community pharmacists' collaboration in primary care : small steps for a major change. *Int J Integr Care* 2021; 21: 1–10.
13. Vervloet M, Meulepas MA, Cals JW, et al. Reducing antibiotic prescriptions for respiratory tract infections in family practice: results of a cluster randomized controlled trial evaluating a multifaceted peer-group-based intervention. *NPJ Prim Care Respir Med* 2016; 26: 15083.
14. Nelissen-Vrancken M, Eimers M, Versteeg E. Minimale interventiestrategie voor stoppen met benzodiazepinen. *Huisarts En Wet* 2006; 49: 122–126.
15. Niquille A, Ruggli M, Buchmann M, et al. Impact des Cercles de qualité médecins pharmaciens pour la prescription médicamenteuse entre 1999 et 2010. *Prim Care* 2012; 12: 27–28.

16. Eimers M, van der Aalst A, Pelzer B, et al. Leidt een goed FTO tot beter voorschrijven? *Huisarts En Wet* 2008; 51: 340–345.
17. Florentinus SR, van Hulten R, Kloth MM, et al. The Effect of Pharmacotherapy Audit Meetings on Early New Drug Prescribing by General Practitioners. *Ann Pharmacother* 2007; 41: 319–324.
18. Muijers PEM, Grol RPTM, Sijbrandij J, et al. Differences in prescribing between GPs: impact of the cooperation with pharmacists and impact of visits from pharmaceutical industry representatives. *Fam Pract* 2005; 22: 624–630.
19. Kroneman M, Boerma W, van den Berg M, et al. Netherlands : Health System Review. *Health Syst Transit* 2016; 18: 1–240.
20. Marianne Meulepas. *Relatie tussen FTO-niveau en score op voorschrijfindicatoren*. Utrecht: DGV Nederlands Instituut Voor Verantwoord Medicijngebruik, December 2008.
21. Stolk G. Succesvol farmacotherapeutisch overleg leidt tot efficiënt voorschrijven, <https://www.de-eerstelijns.nl/2018/10/succesvol-farmacotherapeutisch-efficient-voorschrijven/> (2018, accessed 15 December 2020).
22. Bourgueil Y, Marek A, Mousquès J, et al. *Médecine de groupe en soins primaires dans six pays européens, en Ontario et au Québec : état des lieux et perspectives*. 537, Paris: IRDES.
23. Lelubre M, Wuyts J, Maesschalck J, et al. Implementation study of an intermediate medication review in Belgian community pharmacies. *Res Soc Adm Pharm* 2019; 15: 710–723.
24. Tommelein E, Mehuys E, Van Tongelen I, et al. Revue de la médication par le pharmacien d’officine en Belgique : pourquoi, comment et situation actuelle. *J Pharm Belg* 2016; 4–13.
25. Gordon E, Macq J, Jamart H, et al. Belgique. Coordination et intégration sont au centre des réformes. *Rev Médicale Suisse* 2018; 14: 1965–6.
26. Société Scientifique des Pharmaciens Francophones. Projets locaux. Les “projets CMP”, <https://www.sspf.be/fr/projets-locaux.html?IDC=145&IDD=168#.X9iTK7PjJPZ> (accessed 15 December 2020).
27. Macé F, Morvan L, Peyron C, et al. Les cercles de qualité médecins-pharmaciens, un mode de collaboration vertueux expérimenté en France. *Actual Pharm* 2020; 59: 43–46.