Introduction

New business model for the retail pharmacy in search of sustainable performance in public health.

27 March 2024
Center for Interdisciplinary Research on Medicines
Crunenberg Robin

Introduction

	Total (millions d'euros)	*Honoraire de délivrance*	*Marge économique*	*Pharmacien de référence*	*BUM Asthme*	*Honoraire de garde*	*Autre (1ère délivrance)*	*Marge économique Tarification à l'unité*	*Honoraire Tarification à l'unité*
2021	612,2	432,1	112,2	34,9	2,2	7,2	0	3	20,5
2020	581,2	420,9	104,2	24,5	1,8	6,4	0	2,8	20,6
2019	583,5	432,8	102,3	19	2	4,1	0	2,8	20,6
2018	569,6	433,4	96,5	1,9	1,8	4,3	9,1	2,7	19,9
2017	561,3	426	97	0	1,5	4,4	10,3	2,7	19,5
2016	585,8	434,6	99,6	0	0,8	4,7	25,8	2,4	18
2015	581,5	443,2	101,9	0	0,4	4,8	26,1	0,5	4,6
2014	583,3	449	103,4	0	0,4	4,9	25,7	0	0
2013	584,4	443,6	106,1	0	0,1	5,2	29,4	0	0
2012	580	437,4	110,4	0	0	5,1	27,2	0	0

Historical

- 2009 - Introduction of fees in a public pharmacy
- “All pharmacists are responsible for the pharmaceutical acts they perform or supervise, including **pharmaceutical care**, advice and information.”
- Introduction of the **basic fee**
- **Transition from margin to fee**
- 2014 - New service (BUM)
- 2017 - Reference pharmacist
- 2021 - Testing
- 2022 - Vaccination
- 2023 - Medication Review, Benzodiazepine withdrawal

Trends

Allocation of the indexation of the pharmacist budget from the INAMI 100% to the service

Introduction

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The starting point of the research

- Back in 2016 : Strategic analysis of the Belgian public pharmaceutical sector and future perspectives.
- Application of environment analysis methods to the particular context of public Belgian pharmacy
- Stress tests based on scenarios and their occurrence probability

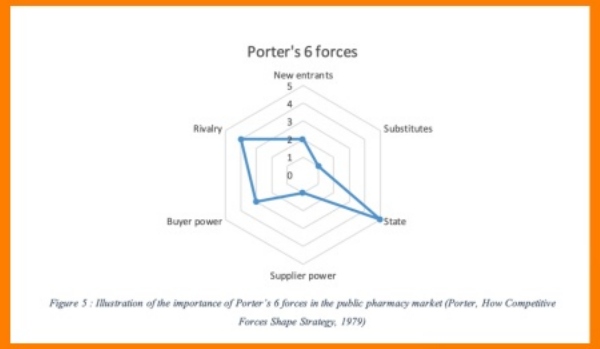


Figure 5 : Illustration of the importance of Porter's 6 forces in the public pharmacy market (Porter, How Competitive Forces Shape Strategy, 1979)

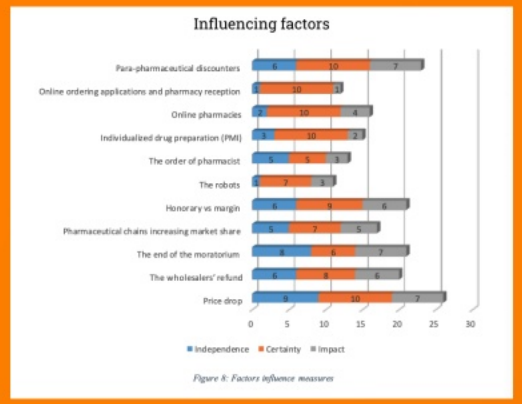


Figure 8: Factors influence measures

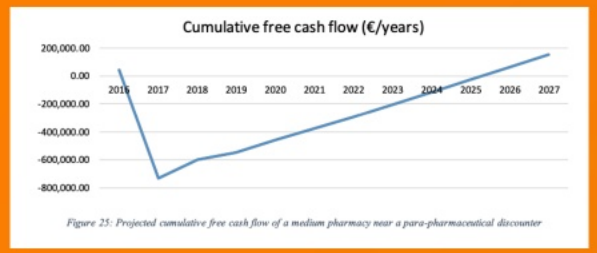


Figure 25: Projected cumulative free cash flow of a medium pharmacy near a para-pharmaceutical discounter

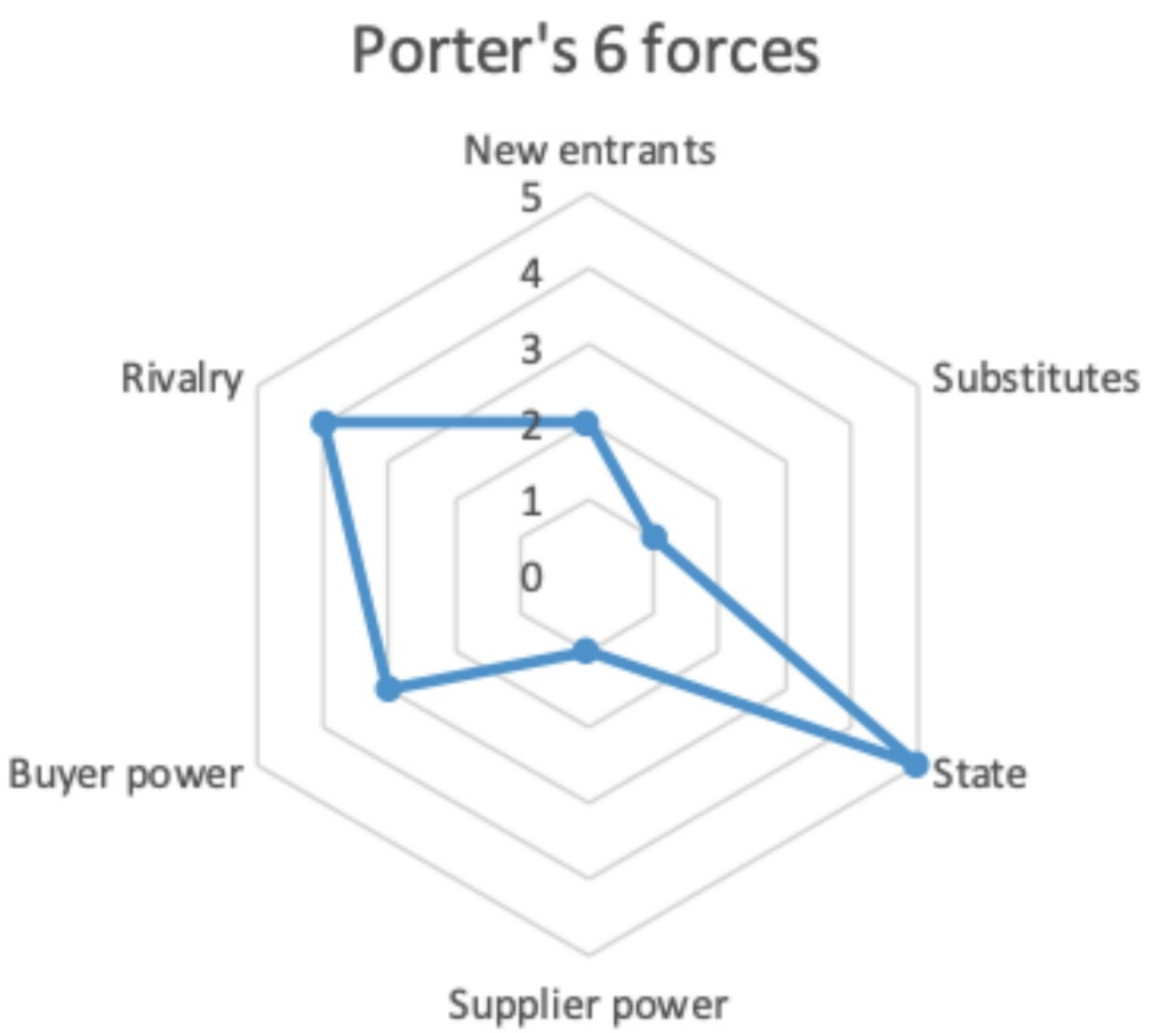
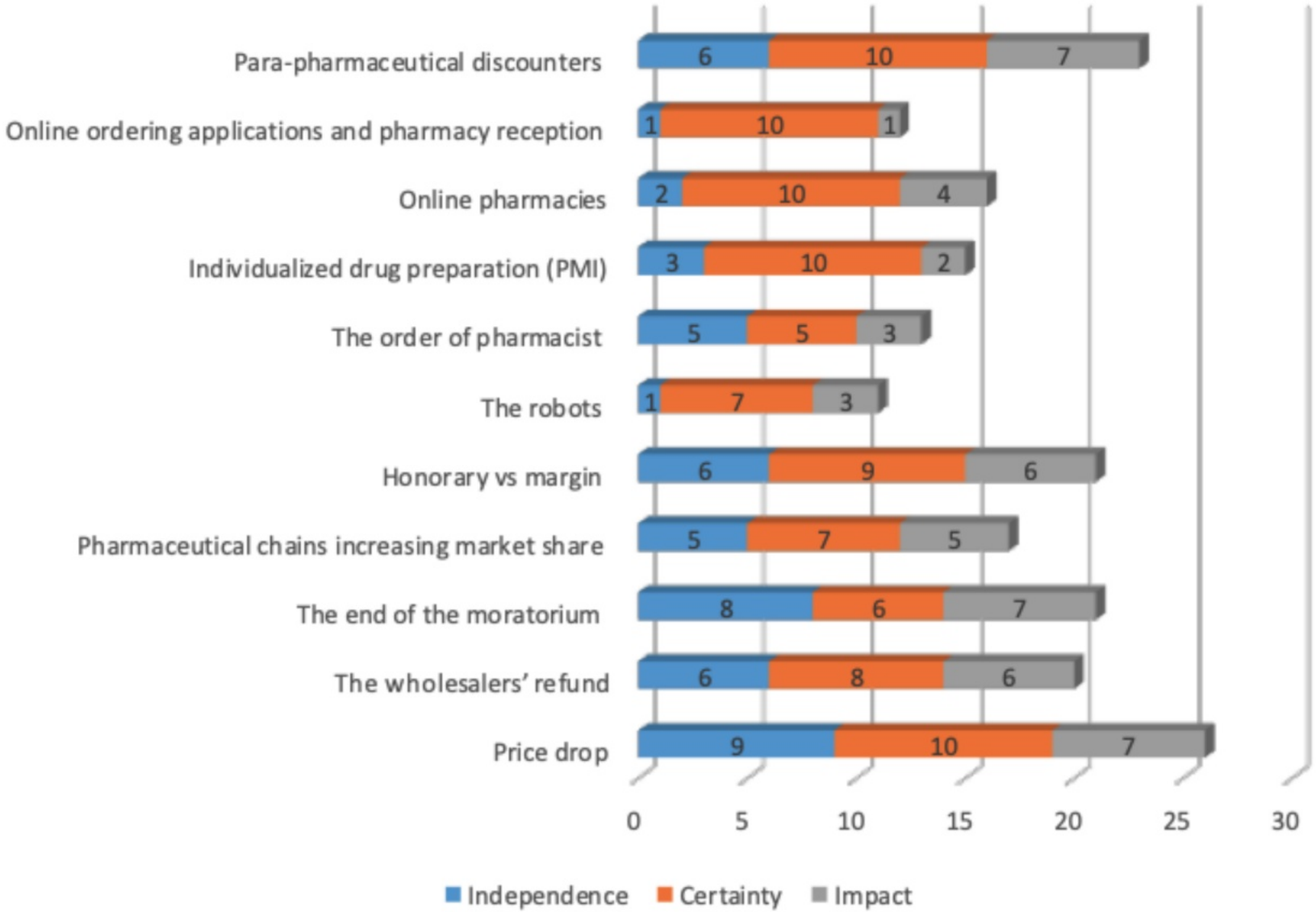


Figure 5 : Illustration of the importance of Porter's 6 forces in the public pharmacy market (Porter, How Competitive Forces Shape Strategy, 1979)

Influencing factors



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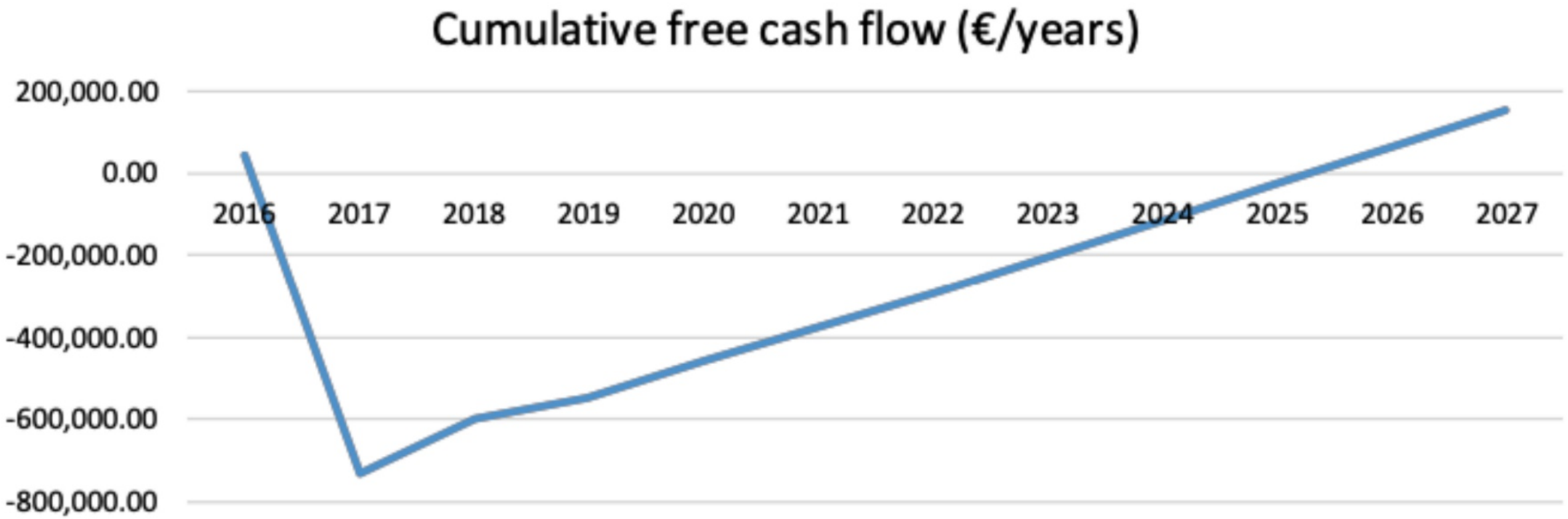

Figure 25: Projected cumulative free cash flow of a medium pharmacy near a para-pharmaceutical discounter

Objective

Understand and explain the evolution of the community pharmacist and identify the potential benefits of this change for **public health**.

Role evolution can be perceived differently depending on the level at which the phenomenon is observed. A **scale of economic activity** structured into three levels was chosen to establish our objectives: macroeconomic, mesoeconomic and microeconomic.

Macroeconomic level

- The study of economic phenomena on a large scale or macroeconomic level
- **Non-specific aspect** : Pharmacies, like other businesses, create jobs and influence the unemployment rate. They pay taxes which are sources of revenue for the state
- Specific aspect : pharmacies are one of the bases of health care. They offer, through their **accessibility**, a sometimes unique point of access to the healthcare system for isolated populations. The health information, **prevention** services and medication collection that they offer contribute to the **education** of the population, the prevention of diseases and the **reduction of pollution**.
- **Is this still a product based business?**

Mesoeconomic level

Intermediate level sometimes synonymous with local or regional
Importance to **collaborations with other healthcare providers**.
A concrete example of this level is participation in a vaccination campaign within a local vaccination center because it combines collaboration, integration, prevention, health promotion and adaptation to local needs.

Microeconomic level

The microeconomic level focuses on the interactions and economic consequences of pharmacy as a business.
The individual pharmacist is also considered at this level.
The interest of this scale for public health is less important?

= **Management**

Macroeconomic level

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= **Management**

Diving into the mesoeconomic level

Detailed analysis of pharmacist involvement in interprofessionalism in health and its impact on public health

Meso = The accessible and impactful door

- Collaboration within healthcare institutions
- Collaboration in the ambulatory environment
- Competition in acts of care
- Students' interest in sectoral developments
- Management by pharmacists facing public health problems and impact on them

Collaboration within healthcare institutions

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Interpretative phenomenological analysis of the collaboration among healthcare professionals in the nursing home setting

Robin Crunenberg [a,c,*], Camille Charles [a], Alice Lallemand [a], Laetitia Buret [b], Geneviève Philippe [a], Olivier Ethgen [c]

[a] Faculty of Medicine, Department of Pharmacy, Center for Interdisciplinary Research on Medicines (CIRM), University of Liège, Liège, Belgium
[b] Faculty of Medicine, Department of General Medicine, University of Liège, Liège, Belgium
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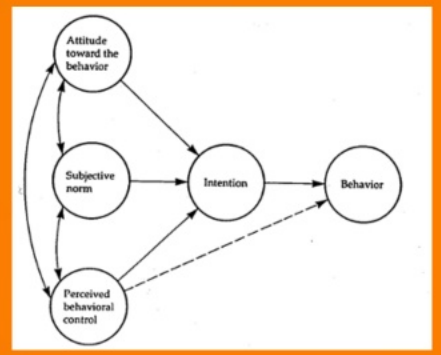
Interpretative phenomenological analysis of the collaboration among healthcare professionals in the nursing home setting

Objectives: This study aimed to explore the roles of physicians, pharmacists, and nurses in the interprofessional collaboration process while identifying facilitators and barriers to effective collaboration among healthcare professionals.

Background: The theory of planned behavior (TPB) postulates that **behavioral performance is guided by the intention to perform that behavior**, influenced by attitudes, subjective norms (social pressure) , and perceived behavioral control.



This framework can be applied to studying interprofessional collaboration among healthcare professionals to enhance patient safety and public health within nursing homes.

Methods

- Individual semi- structured interviews were conducted with 19 healthcare professionals. Qualitative data were then integrated and analyzed through the lens of the theory of planned behavior (TPB).
- The Consolidated Criteria for Reporting Qualitative Research (COREQ), 32-item checklist tailored for interviews, was employed as a reporting tool

1. The first step was **familiarization and transcription**
2. Second step **labels identification and meaning units** : capture significant aspects of the participants' experiences.
3. The third step was **properties and phenomena identification** : uncover the essence and nature of the experiences expressed by participants.
4. The fourth step was **organizing properties into categories**
5. The fifth step was **deriving themes**: applying both content analysis and IPA, the identified categories were analyzed to derive broader themes that elucidate the essential qualitative information
6. The sixth step was **integration within IPA**: The themes derived through content analysis were integrated within the interpretative phenomenological framework, aligning the broader themes with the deeper phenomenological exploration.

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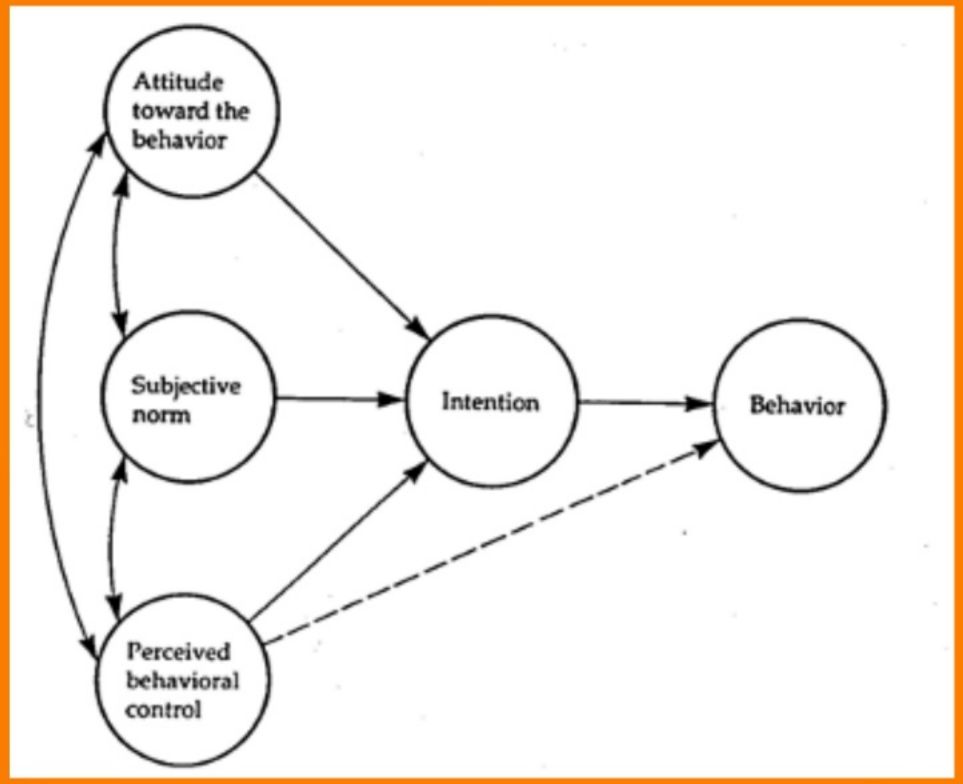

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Method

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Factors impacting the collaboration between healthcare professionals

The thematic analysis, embedded in the IPA, allowed us to identify **ten themes that impacted interprofessional collaboration** between pharmacists, physicians, and nurses:

- Communication
- Role and responsibilities
- Willingness to collaborate
- Knowledge of other collaborators
- Trust
- Recognition and self-confidence
- Support,
- Rules and protocol
- Technology
- Distance

Depending on the empirical landscape, these themes were sometimes considered as facilitators and sometimes as barriers to collaboration.

Conclusion

Our findings show that physicians, pharmacists, and nurses reported **favorable inclinations toward collaboration** in nursing homes.
However, their intentions to initiate these collaborations remained challenging for the three health professions.
Factors such as **subjective norms**, for instance, the **absence of clear legal regulations**, pose challenges, and perceived behavioral control issues, such as physicians' **limited awareness regarding pharmacists' expertise** and not efficient interpersonal skills, could represents barriers to the collaborative process.

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Our findings show that physicians, pharmacists, and nurses reported **favorable inclinations toward collaboration** in nursing homes.

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Collaboration in the ambulatory environment

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Crunenberg et. al., 2023, 7 (4), 251-260

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Section D: Clinical Pharmacy & Pharmacology

Current Practice in Weekly Pillbox Preparation and Perceived Added Value of Future Collaboration between Community Pharmacists and Home Care Nurses in Belgium

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[2]*Division of Public Health, Epidemiology and Health Economics, University of Liège, Liège, Belgium.*

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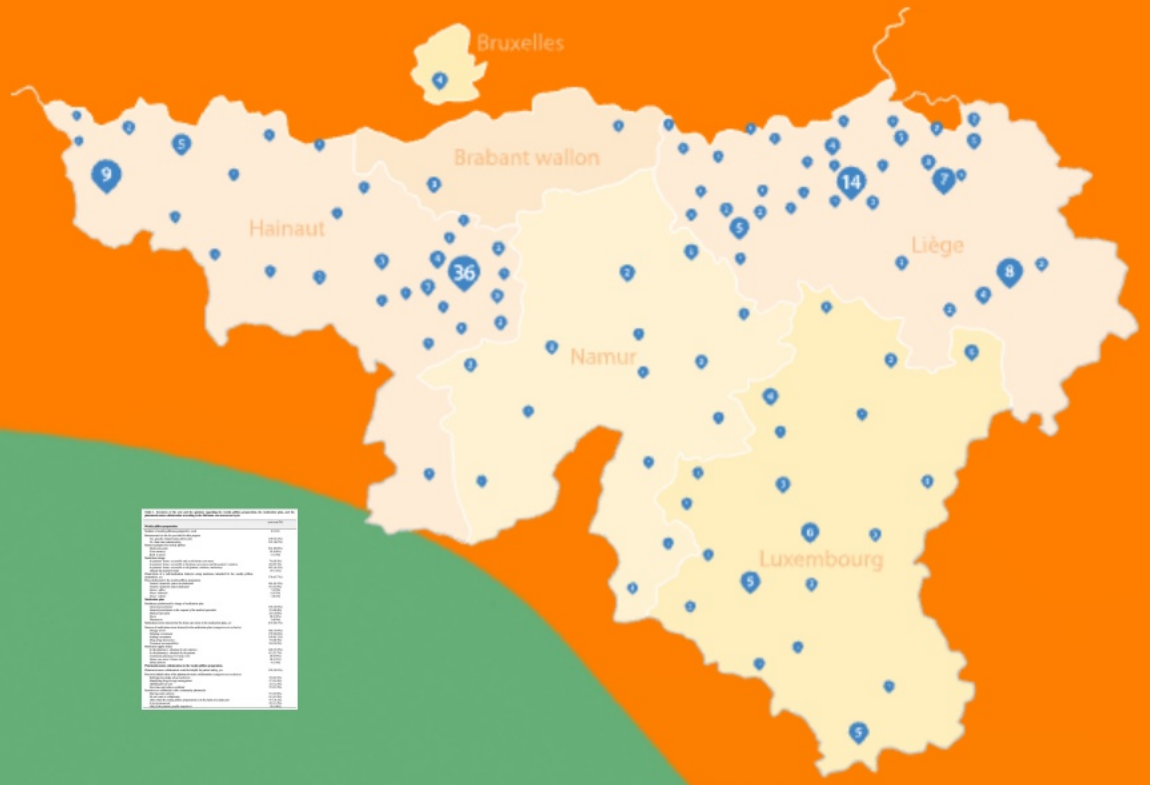
Current Practice in Weekly Pillbox Preparation and Perceived Added Value of Future Collaboration between Community Pharmacists and Home Care Nurses in Belgium

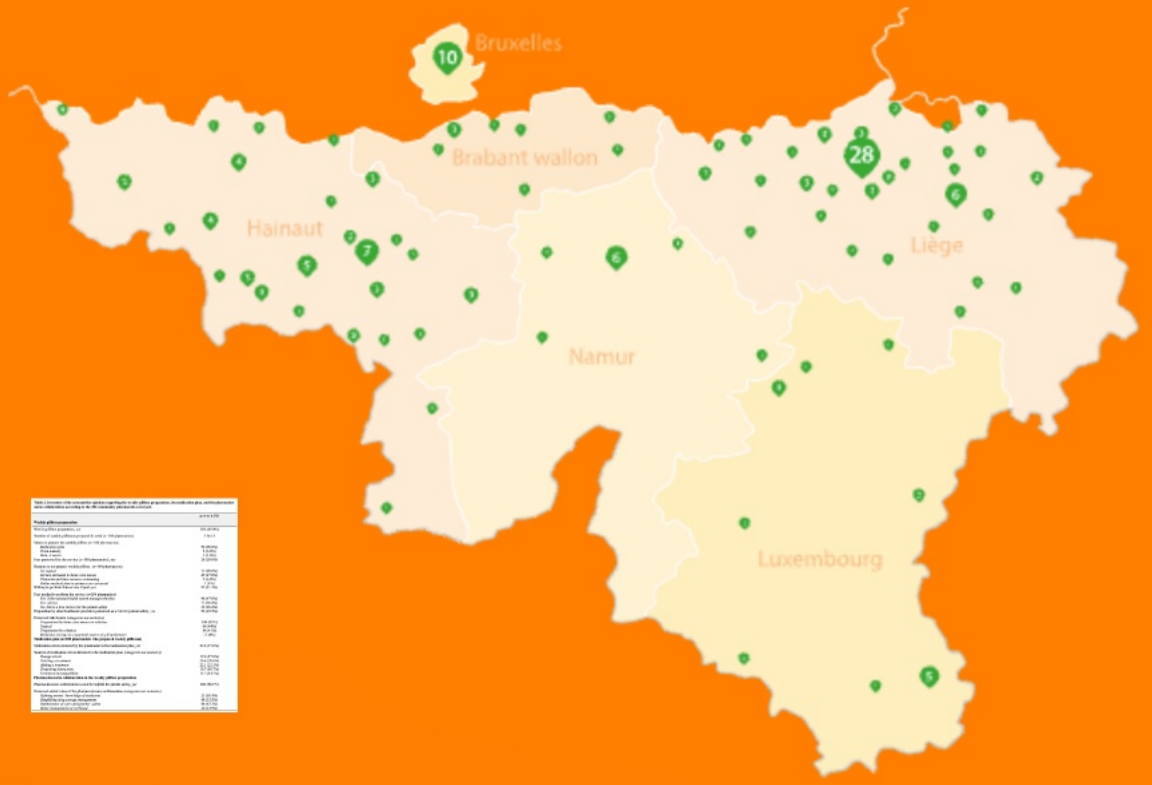
Background: **Medication-related errors** represent a public health burden but are mainly **preventable**. A strategy to reduce medication errors could be **pharmacist-nurse collaboration** in **weekly pillbox preparation**.

Objective: To assess the weekly pillbox preparation practices among **home care nurses** and **community pharmacists**, their collaboration for this service, and its added value, ultimately aiming to promote **patient safety**.

Methods: An extensive **survey** was launched in **French-speaking Belgium** in 2022. The study occurred across two populations: home care nurses and community pharmacists in French-speaking Belgium. A **self-administered questionnaire** was developed. Three main outcomes were reported: the pillbox preparation, the **medication plan**, and the **opinion** about the pharmacist-nurse collaboration. A descriptive statistical analysis was carried out.

Results: A total of 260 home care nurses and 204 community pharmacists answered the questionnaire





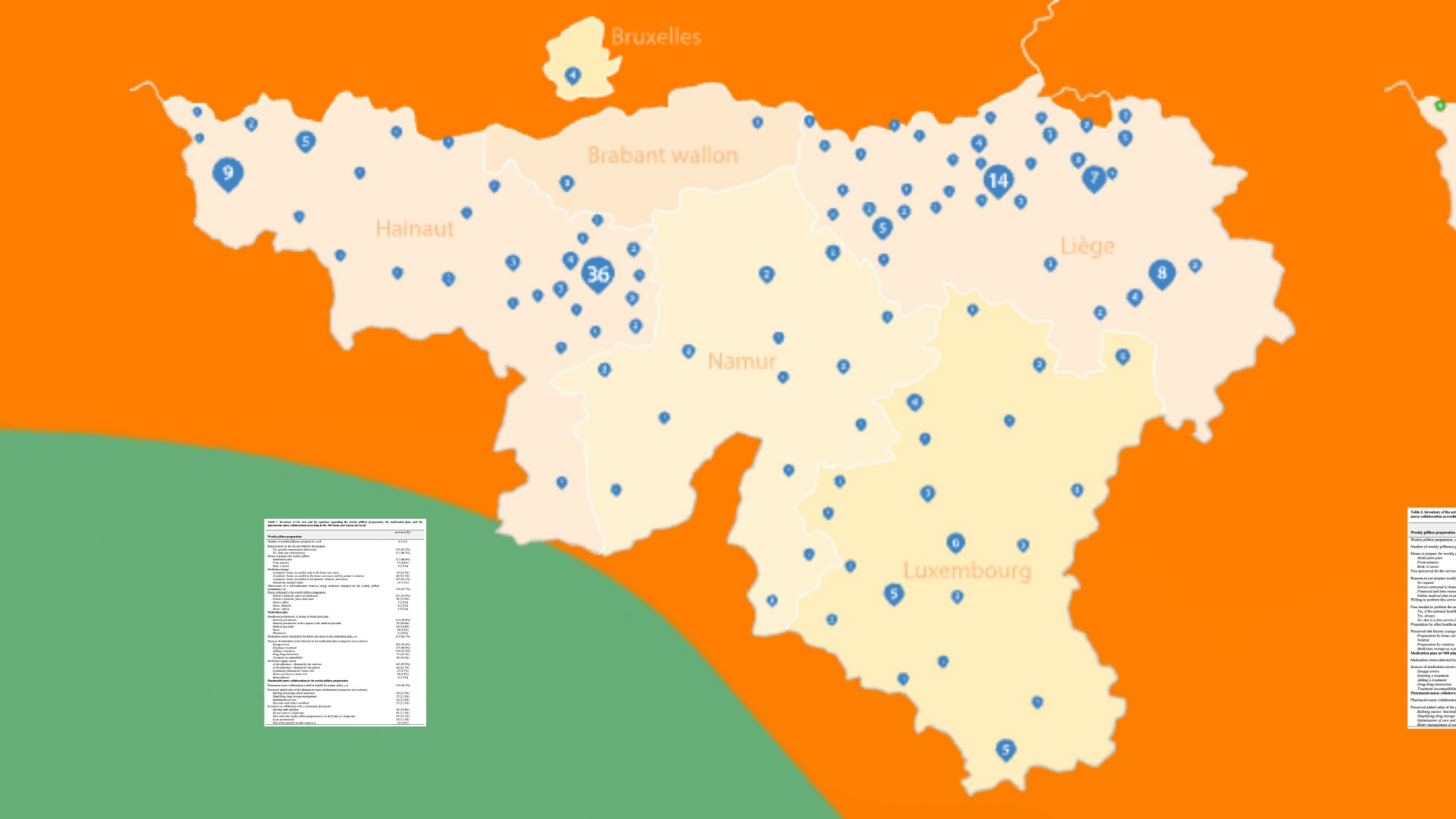


Table 1. Inventory of the acts and the opinions regarding the weekly pillbox preparation, the medication plan, and the pharmacist-nurse collaboration according to the 263 home care nurses surveyed.

	patients(%)
Weekly pillbox preparation	
Number of weekly pillboxes prepared (6) /week	6.5±1.0
Reminicated via the fax provided for this purpose	
Yes, specific remuneration (flawed fee)	120 (51.1%)
No, free of remuneration	115 (48.9%)
Means to prepare the weekly pillbox	
Medication plan	211 (80.8%)
From memory	21 (8.0%)
Both, it varies	7 (3.9%)
Identification of patients	
At patients' home, accessible only to the home care nurse	74 (28.1%)
At patients' home, accessible to the home care nurse and the patient's relatives	60 (22.1%)
At patients' home, accessible to all (patient relatives, and nurse)	107 (41.3%)
Outside the patient's home	19 (7.3%)
Observation of a self-medication behavior using medicines intended for the weekly pillbox preparation	176 (67.7%)
Prime dedicated to the weekly pillbox preparation	
Patient's domicile (place established)	161 (61.9%)
Patient's domicile (place shall exist)	85 (32.6%)
Nurse's office	7 (2.9%)
Nurse' domicile	6 (2.3%)
Other place	1 (0.3%)
Medication plan	
Healthcare professional in charge of medication plan	
General practitioner	155 (58.8%)
General practitioner at the request of the medical specialist	53 (20.4%)
Medical specialist	25 (10.0%)
Nurse	18 (7.3%)
Pharmacist	12 (4.6%)
Medication errors detected by the home care nurse in the medication plan, yet	115 (52.7%)
Sources of medication errors detected in the medication plan (categories not exclusive)	
Dosage errors	181 (76.4%)
Deleting a treatment	179 (68.8%)
Adding a treatment	139 (61.2%)
Drug-drug interaction	75 (28.1%)
Treatment incompatibility	99 (38.2%)
Medicines supply issues	
All the medicines are obtained by the relatives	143 (55.9%)
At the pharmacy - obtained by the patient	63 (22.7%)
Community pharmacist's home visit	23 (7.7%)
Home care nurse's home visit	24 (9.3%)
Mixte (before)	9 (3.4%)
Pharmacist-nurse collaboration in the weekly pillbox preparation	
Pharmacist-nurse collaboration could be helpful for patient safety, yet	141 (58.4%)
Perceived added value of the pharmacist-nurse collaboration (categories not exclusive)	
Refining knowledge about medicines	56 (23.9%)
Refining nurses' knowledge on case management	13 (5.1%)
Optimization of care	13 (11.5%)
Save time and reduce workload	13 (21.5%)
Incentives to collaborate with a community pharmacist	
Sharing tasks and fees	91 (38.8%)
Only for the weekly pillbox	47 (18.2%)
Only when the weekly pillbox preparation is in the frame of a home care	47 (18.2%)
Is not pronounced	24 (11.4%)
Only if the patient's profile requires it	11 (3.9%)

Table 1. Inventory of the acts and the opinions regarding the weekly pillbox preparation, the medication plan, and the pharmacist-nurse collaboration according to the 260 home care nurses surveyed.

	μ±σ or n (%)
Weekly pillbox preparation	
Number of weekly pillboxes prepared *by week*	6.5±3.8
Remunerated *via* the fee provided for this purpose	
Yes, specific remuneration (direct fee)	139 (53.5%)
No, lump sum remuneration	121 (46.5%)
Means to prepare the weekly pillbox	
Medication plan	231 (88.8%)
From memory	23 (8.8%)
Both, it varies	5 (1.9%)
Medicines storage	
At patients' home: accessible only to the home care nurse	74 (28.3%)
At patients' home: accessible to the home care nurse and the patient's relatives	60 (23.1%)
At patients' home: accessible to all (patient, relatives, and nurse)	107 (41.2%)
Outside the patient's home	19 (7.3%)
Observation of a self-medication behavior using medicines intended for the weekly pillbox preparation, *yes*	176 (67.7%)
Places dedicated to the weekly pillbox preparation	
Patient's domicile: place not dedicated	161 (61.9%)
Patient's domicile: place dedicated	85 (32.9%)
Nurse's office	7 (2.8%)
Nurse' domicile	6 (2.5%)
Nurse' vehicle	1 (0.2%)
Medication plan	
Healthcare professional in charge of medication plan	
General practitioner	153 (58.8%)
General practitioner at the request of the medical specialist	53 (20.4%)
Medical specialist	28 (10.8%)
Nurse	24 (9.2%)
Pharmacist	2 (0.8%)
Medication errors detected by the home care nurse in the medication plan, *yes*	215 (82.7%)
Sources of medication errors detected in the medication plan *(categories not exclusive)*	
Dosage errors	183 (70.4%)
Deleting a treatment	179 (68.8%)
Adding a treatment	159 (61.2%)
Drug-drug interaction	73 (28.1%)
Treatment incompatibility	94 (36.2%)
Medicines supply means	
At the pharmacy: obtained by the relatives	145 (55.9%)
At the pharmacy: obtained by the patient	62 (23.7%)
Community pharmacist's home visit	25 (9.7%)
Home care nurse's home visit	24 (9.3%)
Home delivery	4 (1.4%)
Pharmacist-nurse collaboration in the weekly pillbox preparation	
Pharmacist-nurse collaboration could be helpful for patient safety, *yes*	152 (58.5%)
Perceived added value of the pharmacist-nurse collaboration *(categories not exclusive)*	
Refining knowledge about medicines	58 (22.3%)
Simplifying drug storage management	57 (21.9%)
Optimization of care	32 (12.3%)
Save time and reduce workload	55 (21.2%)
Incentives to collaborate with a community pharmacist	
Sharing tasks and fees	93 (35.8%)
Do not want to collaborate	81 (31.2%)
Only when the weekly pillbox preparation is in the frame of a lump sum	47 (18.1%)
Is not pronounced	29 (11.2%)
Only if the patient's profile requires it	10 (3.8%)

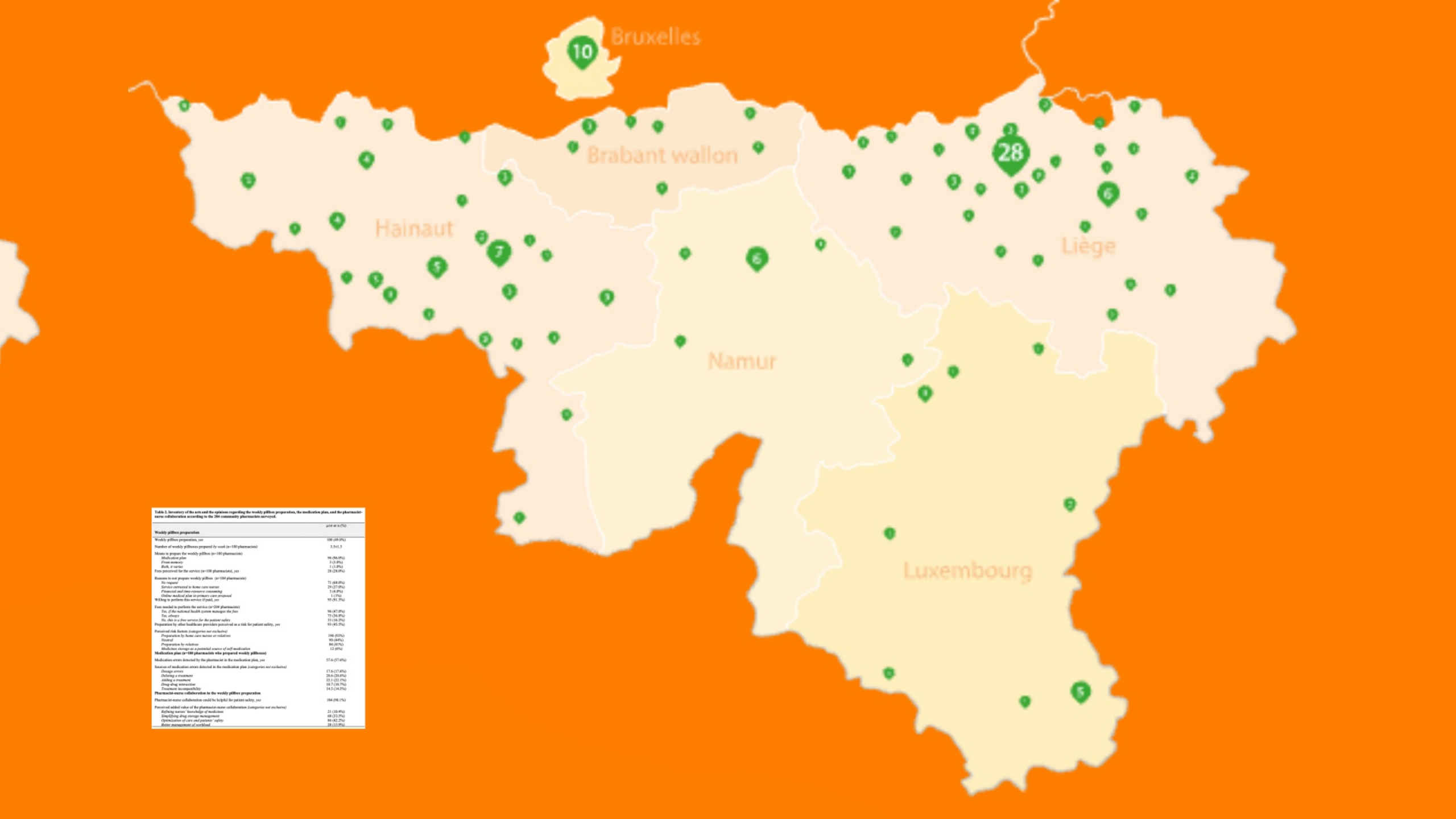


Table 2. Inventory of the acts and the opinions regarding the weekly pillbox preparation, the medication plan, and the pharmacist-nurse collaboration according to the 204 community pharmacists surveyed.

	μ±σ or n (%)
Weekly pillbox preparation	
Weekly pillbox preparation, *yes*	100 (49.0%)
Number of weekly pillboxes prepared *by week* (n=100 pharmacists)	5.5±1.5
Means to prepare the weekly pillbox (n=100 pharmacists)	
Medication plan	96 (96.0%)
From memory	3 (3.0%)
Both, it varies	1 (1.0%)
Fees perceived for the service (n=100 pharmacists), *yes*	28 (28.0%)
Reasons to not prepare weekly pillbox (n=104 pharmacists)	
No request	71 (68.0%)
Service entrusted to home care nurses	29 (27.0%)
Financial and time-resource consuming	5 (4.8%)
Online medical plan in primary care proposal	1 (1%)
Willing to perform this service if paid, *yes*	95 (91.3%)
Fees needed to perform the service (n=204 pharmacists)	
Yes, if the national health system manages the fees	96 (47.0%)
Yes, always	75 (36.8%)
No, this is a free service for the patient safety	33 (16.2%)
Preparation by other healthcare providers perceived as a risk for patient safety, *yes*	93 (45.5%)
Perceived risk factors *(categories not exclusive)*	
Preparation by home care nurses or relatives	198 (93%)
Neutral	93 (44%)
Preparation by relatives	88 (41%)
Medicines storage as a potential source of self-medication	12 (6%)
Medication plan (n=100 pharmacists who prepared weekly pillboxes)	
Medication errors detected by the pharmacist in the medication plan, *yes*	57.6 (57.6%)
Sources of medication errors detected in the medication plan *(categories not exclusive)*	
Dosage errors	17.6 (17.6%)
Deleting a treatment	20.6 (20.6%)
Adding a treatment	22.1 (22.1%)
Drug-drug interaction	10.7 (10.7%)
Treatment incompatibility	14.5 (14.5%)
Pharmacist-nurse collaboration in the weekly pillbox preparation	
Pharmacist-nurse collaboration could be helpful for patient safety, *yes*	104 (98.1%)
Perceived added value of the pharmacist-nurse collaboration *(categories not exclusive)*	
Refining nurses' knowledge of medicines	21 (10.4%)
Simplifying drug storage management	68 (33.5%)
Optimization of care and patients' safety	86 (42.2%)
Better management of workload	28 (13.9%)

Table 2. Inventory of the acts and the opinions regarding the weekly pillbox preparation, the medication plan, and the pharmacist-nurse collaboration according to the 204 community pharmacists surveyed.

	μ±σ or n (%)
Weekly pillbox preparation	
Weekly pillbox preparation, *yes*	100 (49.0%)
Number of weekly pillboxes prepared *by week* (n=100 pharmacists)	3.5±1.3
Means to prepare the weekly pillbox (n=100 pharmacists)	
Medication plan	96 (96.0%)
From memory	3 (3.0%)
Both, it varies	1 (1.0%)
Fees perceived for the service (n=100 pharmacists), *yes*	28 (28.0%)
Reasons to not prepare weekly pillbox (n=104 pharmacists)	
No request	71 (68.0%)
Service entrusted to home care nurses	29 (27.0%)
Financial and time-resource consuming	3 (4.0%)
Online medical plan in primary care proposal	1 (1%)
Willing to perform this service if paid, *yes*	95 (91.3%)
Fees needed to perform the service (n=204 pharmacists)	
Yes, if the national health system manages the fees	96 (47.0%)
Yes, always	75 (36.8%)
No, this is a free service for the patient safety	33 (16.2%)
Preparation by other healthcare providers perceived as a risk for patient safety, *yes*	93 (45.5%)
Perceived risk factors *(categories not exclusive)*	
Preparation by home care nurses or relatives	190 (93%)
Neutral	90 (44%)
Preparation by relatives	84 (41%)
Medicines storage as a potential source of self-medication	12 (6%)
Medication plan (n=100 pharmacists who prepared weekly pillboxes)	
Medication errors detected by the pharmacist in the medication plan, *yes*	57.6 (57.6%)
Sources of medication errors detected in the medication plan *(categories not exclusive)*	
Dosage errors	17.6 (17.6%)
Deleting a treatment	20.6 (20.6%)
Adding a treatment	22.1 (22.1%)
Drug-drug interaction	10.7 (10.7%)
Treatment incompatibility	14.5 (14.5%)
Pharmacist-nurse collaboration in the weekly pillbox preparation	
Pharmacist-nurse collaboration could be helpful for patient safety, *yes*	184 (90.1%)
Perceived added value of the pharmacist-nurse collaboration *(categories not exclusive)*	
Refining nurses' knowledge of medicines	21 (10.4%)
Simplifying drug storage management	68 (33.5%)
Optimization of care and patients' safety	86 (42.2%)
Better management of workload	28 (13.9%)

Conclusion: Our survey showed that **pharmacist-nurse collaboration** in the **weekly pillbox preparation** was perceived as helpful in primary care with the ultimate goal of **patient safety**. **Research** is underway to examine the impact of this intervention and if it could be cost-effective.

Students' interest in sectoral developments

Preferences and perceptions of pharmacy students on the sectoral development of community pharmacy in Belgium

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CONFERENCE ABSTRACTS

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Preferences and perceptions of pharmacy students on the sectoral development of community pharmacy in Belgium

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Introduction: Building the future of the pharmacist profession today must be done by listening to the actors of tomorrow. Their wishes and main motivations must be integrated into reflections. The university needs to understand how students plan for their future professions. Consistency between teaching and sectoral development is at the heart of university concerns: anticipating professional changes can help the academic body build flexible programmes to align with professional development and best prepare actors of tomorrow.

Objectives: To assess the preferences and perception of Master's students in pharmaceutical sciences among various potential sectoral evolution in the field of pharmacies open to the public. This research questions how future pharmacists rank in order of importance and preference for the potential sectoral developments in their profession.

Methods: An online questionnaire was sent to Belgian student in pharmaceutical sciences to understand their preferences concerning the various missions expected to be part of the role of pharmacists in the years to come. Some of these missions already exist in Belgium, others already exist abroad, and others still need to be the responsibility of the pharmacist at present.

The questionnaire used a best-worst scaling (BWS) approach to determine a hierarchy of preferences on a set of attributes describing the potential sectoral developments in community pharmacists. The BWS then makes it possible to classify preferences based on choices and to compare preferences among all the attributes considered. Respondents do not only express their preferences among the proposed attributes but also provide information through their responses as to the most preferable and least preferable attributes in their eyes. The research team agreed on a list of 18 attributes to characterize the profession of community pharmacists and its potential sectoral developments. The 18 attributes were: preparation and dispensing of medication, pharmaceutical care, adjustment/substitution, continuity of treatment, care monitoring/risk prevention, medication review, self-medication, prescription, adherence support, health prevention and promotion, drug analysis, inter-professional collaboration, pharmaceutical care, vaccination, screening, withdrawal/deprescription, return home after hospitalization and home care.

Results: The topics for which students showed the greatest interest were delivery of medication with advice on the proper use, prevention, identifying and resolving potential drug-related problems or even assisting the patient in a self-medication situation.

The themes with the lowest interest were Greenpharmacy, the collection of used products and sustainable practices.

Conclusion: Future pharmacists do not wish to replace medical doctors and have little interest in diagnosis, prescription and laboratory analysis. Moreover, the lack of interest of future pharmacists in Greenpharmacy raises questions. Making students aware of this significant environmental challenge should be encouraged.

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The attributes were selected based on the latest report on global pharmaceutical services produced by the **International Pharmaceutical Federation(FIP)** and more specifically on the **range of services** that **pharmacists** can provide beyond dispensing.

In this study, 12 **BWS-type questions** covering the **18 attributes** considered were presented to participants. All the data collected was brought together in a **database** in ExcelTM format. **Statistical analyzes** were carried out using **SawtoothTM**. The preference scores were determined in particular using the analyzes and procedures offered by SawtoothTM, and are described below


Mean relative importance scores (RIS)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
DÉLIVRANCES / SOINS PHARMACEUTIQUES
SUIVI DES SOINS / PRÉVENTION DES RISQUES
AUTOMEDICATION
AJUSTEMENT / SUBSTITUTION
CONTINUITÉ
MEDICATION REVIEW
INTERPROFESSIONALITÉ
SEVRAGE / DÉPRESCRIPTION
PRÉPARATIONS MAGISTRALES
SOUTIEN A L'ADHÉSION THÉRAPEUTIQUE
PRESCRIPTION
PRÉVENTION, PROMOTION DE LA SANTÉ ET ETP
VACCINATION
DÉPISTAGE
SOINS
ANALYSES
SOINS À DOMICILE
GREEN PHARMACY

Management by pharmacists facing public health problems and impact on them

Currently being submitted : Influence of drug shortages on the well-being at work of pharmacists practicing in community pharmacies

Parameters studied by the analysis model developed:

studied by the
del developed:

Competition in acts of care

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Section D: Clinical Pharmacy & Pharmacology

Public Health Interest of Vaccination Through Community Pharmacies: A Literature Review

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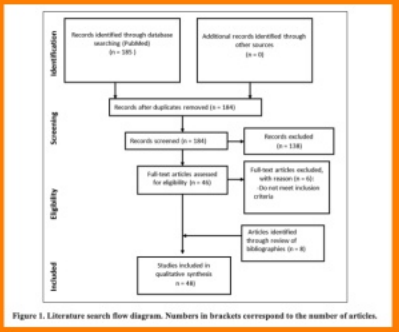
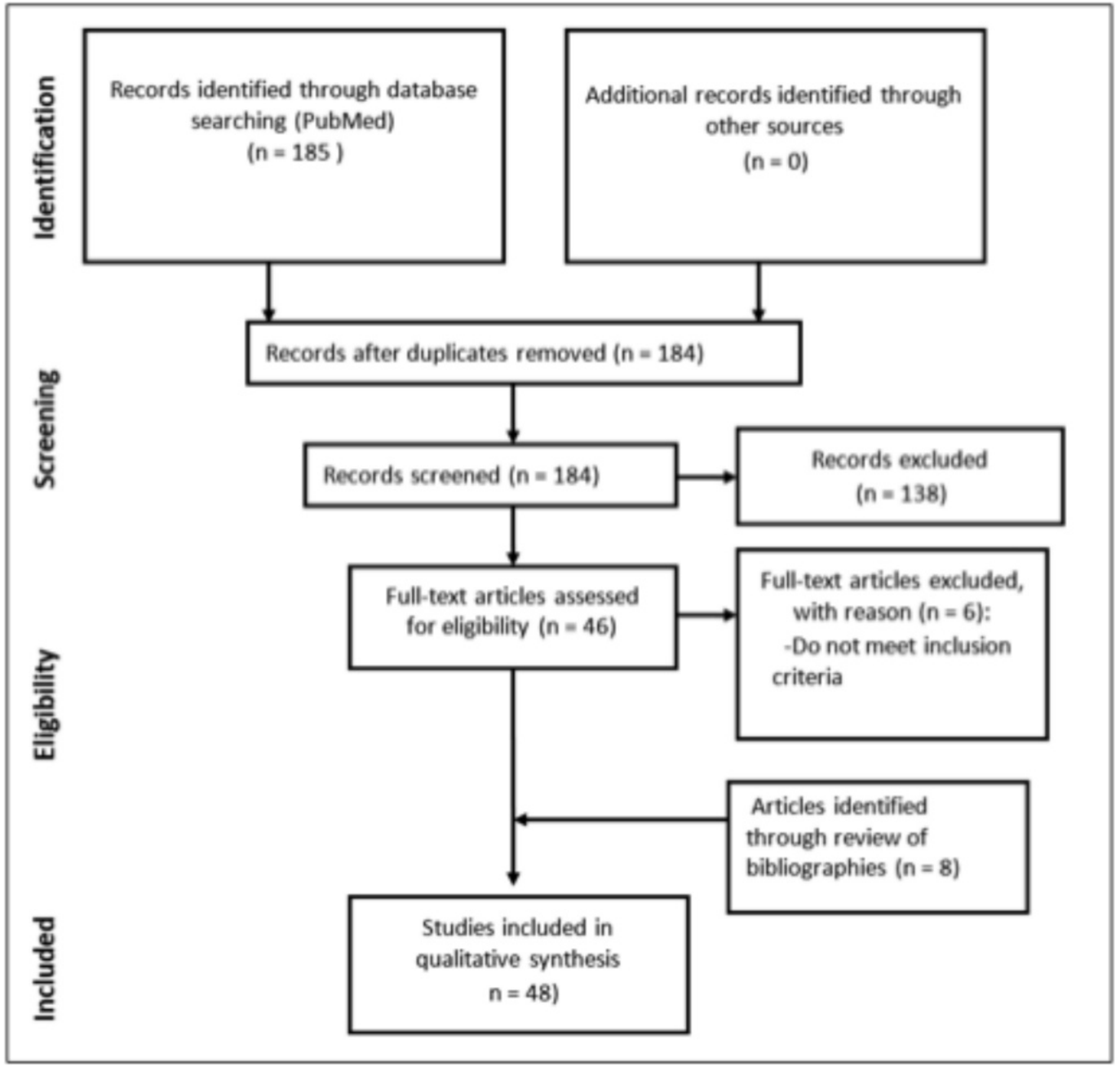


Figure 1. Literature search flow diagram. Numbers in brackets correspond to the number of articles.

PRISMA

- All the articles screened advocate that vaccination in pharmacies significantly increases vaccination coverage because pharmacists can overcome many barriers to vaccination such as lack of access to physician's offices, appointment scheduling, and lack of information among the population.
- BE +8, -8
- Vaccination is also less expensive in pharmacies than in traditional vaccination services because fewer costs are involved when the patient goes only to the pharmacist, without also having to consult a physician.



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In addition to my research, I have the

In addition to my research, I have the chance to be a promoter of 6 students/ year on average and I hope that my work is the opportunity to highlight them

Prisma literature review : Zita & Ranim

Introduction

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27 March 2024
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Thank you for being here and for your attention.