

Building Interprofessional Collaborative Practices Through a Support Program for Patients With Type 2 Diabetes in Primary Care

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Introduction: The building of interprofessional collaborative practices throughout the implementation process of a patient support program (Siscare) in primary care for patients with type 2 diabetes was assessed. Siscare included regular patient–pharmacist motivational-based interviews; medication adherence, patient-reported, and clinical outcomes monitoring; and physician–pharmacist interactions.

Method: This investigation was a prospective, multicenter, observational, mixed-methods cohort study. Interprofessionality was operationalized through four progressive levels of interrelationship practices between the health care professionals. The target number of patients per pharmacy was 10 among 20 pharmacies.

Results: The project started with the recognition of Siscare by stakeholders, the creation of an interprofessional steering committee, and the adoption of Siscare by 41 pharmacies among 47 pharmacies in April 2016. Nineteen pharmacies presented Siscare at 43 meetings attended by 115 physicians. Twenty-seven pharmacies included 212 patients; however, no physician prescribed Siscare. Collaboration primarily occurred through the unidirectional transmission of information from the pharmacist to the physician (level 1: 70% of pharmacists transmitted interview reports to physicians), bidirectional exchange of information sometimes occurred (level 2: 42% received physician responses), and concerted measures of treatment objectives took place occasionally (level 3). Twenty-nine of 33 physicians surveyed were in favor of this collaboration.

Discussion: Despite multiple implementation strategies, physician resistance and lack of motivation to participate exists, but Siscare was well received by pharmacists, patients, and physicians. Barriers to collaborative practice (financial and IT) need to be further explored. Interprofessional collaboration is a clear need to improve type 2 diabetes adherence and outcomes.

Keywords: interprofessional collaboration, health care teams, patient support program, implementation, implementation strategies

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Chronic diseases are a major public health issue and are estimated to affect 57% of the world's population in 2020.¹ In Switzerland, there are approximately 2.2 million patients with chronic diseases,² of whom almost a quarter suffer

from diabetes.³ The consequences of these diseases are manifold,^{4–6} and delaying their effects is essential if more people are to remain healthy and maintain their quality of life despite illness. People with chronic diseases can be supported by need-based

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health promotion programs to reduce the risk of further illness, avoid complications, and reduce the need for more intensive care.⁷ Type 2 diabetes (T2D) is still not optimally managed,³ but initiatives can address this lack of care through collaboration.⁸

Collaboration between health care professionals such as physicians, pharmacists, nurses, and their teams and patient-centered care has been shown to improve the quality of care.^{9–13} *Interprofessionality* can be defined as the collaboration between distinct professions that manifest itself in various forms of increasing interrelationship practices.¹⁴ Responsible use of medications is a major aspect of patient care in which several health professionals can play an important role. The process includes prescription by the physician based on the diagnosis, appropriate and tailored dispensation by pharmacists, taking the medication for the prescribed duration according to the intake instructions by the patients (eg, adherence), and possible assistance with in-home administration by nurses. A study that aimed to describe the accuracy of clinicians' estimates of patient adherence to HIV antiretroviral drugs showed that clinicians tend to overestimate medication adherence and inadequately detect poor adherence and may therefore miss important opportunities to intervene to improve drug self-management.¹⁵ Medication adherence is a dynamic process that fluctuates over the course of life events. Physicians may also be influenced by the so-called toothbrush effect, with patients taking medication more regularly before a medical appointment (similar to a visit to the dentist).¹⁶ Pharmacists can play a key role in identifying patients who are not adhering to their treatment, particularly when therapeutic goals are not met, to support patients before intensifying therapy or undergoing additional examinations.¹⁶ Moreover, the role of the community pharmacist in primary care is undergoing a change in Switzerland and worldwide; it is becoming more clinically and patient oriented. Special services to patients taking long-term or multiple medications focusing on improving medication adherence and rational drug use have been developed.¹⁷ Thus, supporting chronic patients through programs requires a long-term collaborative commitment that takes into account the specific context and needs of each patient.

The benefits of health care interventions can only be achieved if they are implemented effectively.^{18,19} In the past, research has largely focused solely on the effectiveness of clinical interventions and not on their implementation in the delivery setting.²⁰ Implementation science has been developed to reduce the gap between the development of effective health care interventions and their incorporation into routine practice.^{21,22} The objective of this study was to assess the building of interprofessional collaborative practices throughout the implementation process of a support program (Siscare) for patients with T2D, Siscare-DT2, in primary care in the French-speaking part of Switzerland.²³

METHOD

Research Design

This research is part of a larger prospective, multicenter, and observational study that used a hybrid implementation-effectiveness design and the Framework for the Implementation of Services in Pharmacy (FISpH).²⁴ The research protocol, including the full methodology, has been presented elsewhere.²³

Intervention

The intervention, called Siscare, is an interprofessional patient support program that includes (1) regular motivational semi-structured interviews (patient–community pharmacist), at least every 3 months; (2) electronic monitoring of medication adherence by electronic pillbox (MEMS and MEMS AS, AARDEX Group, Switzerland) and patient-reported and clinical outcomes; and (3) interactions between the referent physician and the pharmacist to promote the continuity of care.²³ The referent physician of the patient is a general practitioner or a specialist, who is usually responsible for coordinating the patient's diabetes care. The interaction between the health care professionals begins with the transmission of a report from the pharmacist to the physician after each interview, including a description of medication adherence, barriers and facilitators, adverse reactions, clinical outcomes, and patient engagement. The program aims to contribute to reaching individual patient therapeutic goals and improving patient general health, to support medication adherence, and to strengthen the continuity of care between the different health care professionals involved in the patient care pathway. Siscare is offered by the interprofessional medication adherence program (IMAP) SA, a practice change facilitator/purveyor that has been developing smart and innovation solutions for a network of community pharmacies, since 2011,²⁵ based on adaptations of the IMAP that was developed and implemented with various chronic populations, such as hypertension and patients with HIV, through a physician–pharmacist–nurse collaboration at the IMAP starting in 1995.^{26,27}

Participants and Research Setting

Participants in the study were pharmacists, patients, and their referent physicians. Any community pharmacy in the French-speaking part of Switzerland could join the IMAP network and take part in the study or leave the network or study at any time. The French-speaking part is located in the Western part of Switzerland, comprises 7 of the 26 cantons, and represents 25% of the Swiss population or 2.1 million people in 2019.²⁸ Patients were eligible if they came to a network pharmacy or a partner general practice, were adults (≥ 18 years) diagnosed with T2D, and took at least one oral antidiabetic medication. Exclusion criteria were a diagnosis of type 1 diabetes, an obvious cognitive impairment, and an insufficient ability to speak French for completing the questionnaires.

Recruitment was performed at three levels: (1) The practice change facilitator promoted the study to all pharmacies in the network ($n = 47$) and recruited the volunteer participants; (2) the recruited pharmacists promoted Siscare to physicians in their neighborhood or acquaintances to create local interprofessional networks and to promote the inclusion of patients in the medical practices; and (3) the recruited pharmacists identified their eligible patients through the pharmacy database, without selecting patients based on their a priori level of medication adherence, and informed the referent physician of the inclusion of a patient (target of 10 patients to be included and 20 pharmacies). The number of invited physicians/patients was not quantified.

Implementation Strategies

Targeted efforts designed to promote the implementation of the intervention, its integration into routine practice and particularly the building of collaborative practices were developed (Table 1). These implementation strategies were divided across the four stages of the implementation process²⁴: exploration (appraisal of the service to either accept or reject it), preparation (preparation of the staff and setting and getting the system ready for delivery), operation (the process followed to integrate and use a service within a setting), and sustainability (integration and continuation of service delivery).

Measures

Measures were evaluated across the different stages of the implementation process²⁴: indicators of interprofessional collaborative practices and operationalization across four levels (Table 2); usefulness of the implementation strategies; influencing factors and health care professionals’ and patients’ satisfaction with collaborative practices; and fidelity to the use of the interview report sent by the pharmacist to the physician and adaptations if any.

Data Collection

Data were collected using both qualitative and quantitative methods between April 2016 and December 2018. The qualitative methods included two semistructured focus groups conducted with volunteer pharmacists to explore their motivation, facilitators and barriers related to topics such as the inclusion of patients, the delivery of the intervention, and interprofessional collaboration. Two sessions were held during the inclusion period (preparation stage—November 2016), with a total of 17 pharmacists from 12 pharmacies (n = 12/41 participating pharmacies, 29%), and two sessions during the delivery of Siscare-DT2 (operation stage—May 2018), with 11 pharma-

cists from 11 pharmacies (n = 11/27 pharmacies that had included at least one patient, 41%) that had included at least one patient. There was always one pharmacist representative of the pharmacy, who was called the project leader, but several pharmacists in the same pharmacy could participate. Quantitative methods included monitoring of data uploaded on the web-based platform used by pharmacists to deliver Siscare-DT2, questionnaire (through telephone calls) and on-site audit for pharmacies, and a questionnaire submitted to physicians and patients. The questionnaire for physicians evaluated their experience and satisfaction with Siscare and consisted of six questions (see Appendix 1, Supplemental Digital Content, <http://links.lww.com/JCEHP/A185>), whereas the patient questionnaire addressed perceptions and satisfaction with interprofessional collaboration with two questions. Both questionnaires were on a four-point scale. All evaluation materials were developed by the research team.

Data Analysis

With participants’ consent, all telephone interviews and focus groups were audio-recorded. Focus groups were transcribed, and data were formally analyzed with MAXQDA Standard 12 (VERBI software GmbH). Descriptive statistics were calculated with Microsoft Excel software (Microsoft Office Professional Plus).

Ethical Considerations

All procedures performed in studies involving human participants were in accordance with the ethical standards of the Cantonal Ethics Committee of Research on Human Beings of the Canton of Vaud [Protocol No. 2016-00110]. Informed consent was obtained from all individual participants included in the study. Pharmacists provided oral consent, and patients provided written consent. Data were coded.

TABLE 1.
Implementation Strategies to Build Interprofessional Collaborative Practices in Siscare-DT2

Target	Stages of the Implementation Process			
	1. Exploration	2. Preparation	3. Operation	4. Sustainability
Stakeholders	<ul style="list-style-type: none"> • Recognition of the project by stakeholders • Establishment of an interprofessional steering committee 	<ul style="list-style-type: none"> • Biannual meetings between the purveyor, the research team, and the steering committee to present the study’s progress and discuss subsequent actions 		<ul style="list-style-type: none"> • Recommendations to the Swiss Federal Office of Public Health
Pharmacy team (including pharmacist and technician)	<ul style="list-style-type: none"> • Recruitment of pharmacies 	<ul style="list-style-type: none"> • Toolkit: Siscare leaflet, communication material, and access to a secure web-based platform • Staff training • Creation of a list of eligible patients through the pharmacy database 		<ul style="list-style-type: none"> • Use and continuous improvement of the toolkit • Ongoing staff training adapted to pharmacies’ specific needs
Physicians and pharmacists	<ul style="list-style-type: none"> • Information through professional associations 	<ul style="list-style-type: none"> • Set up of local interprofessional networks by the pharmacists 		<ul style="list-style-type: none"> • Continuous development of interprofessional networks by the pharmacists
Research team	<ul style="list-style-type: none"> • Implementation-effectiveness research protocol 	<ul style="list-style-type: none"> • Data collection • PDCA (Plan, Do, Check, and Act) monitoring and feedback to participants • Publication of findings and recommendations 		

TABLE 2.
Four Progression Levels of Building Interprofessional Practices

Levels of Collaboration	Measured Outcomes	Observed Findings in Siscare-DT2
1. Unidirectional transmission of information Pharmacist → physician	<ul style="list-style-type: none"> The pharmacist promotes Siscare to physicians and their assistants in the neighbourhood/acquaintances. The pharmacist informs the referent physician after having included a patient in Siscare, sends the patient's treatment plan and the interview report to the referent physician, and gives a copy to the patient. 	<ul style="list-style-type: none"> 89% (n = 24/27*) of pharmacists contacted physicians to inform them of the project, 73% presented the project to them in-person, and 30% (n = 8/27) of pharmacists had occasional contact with medical assistants. 70% (n = 19/27) of pharmacists sent a report to the physician.
2. Bidirectional exchange of information Pharmacist ↔ physician	<ul style="list-style-type: none"> The physician shares the clinical outcomes and therapeutic objectives with the pharmacist. 	<ul style="list-style-type: none"> 42% (n = 8/19†) of pharmacists have always or sometimes received answers from the physician regarding the interview report.
3. Concerted measures of treatment objectives, calling for complementary skills between pharmacists and physicians	<ul style="list-style-type: none"> The physician refers the patients to the pharmacy or prescribes Siscare. The physician approves and, if necessary, adapts the treatment plan in consultation with the pharmacist and discusses solutions to address medication nonadherence, management of side effects, unreached therapeutic goals, or other issues in accordance with the patient. 	<ul style="list-style-type: none"> No physician referred an eligible patient to a pharmacy or prescribed Siscare. 52% (n=17/33‡) of physicians were willing to prescribe Siscare to other eligible patients.
4. Sharing of decisions and actions in line with a common therapeutic objective Pharmacist ↔ physician	<ul style="list-style-type: none"> The physician and the pharmacist together discuss specific objectives and field of actions, with the aim of defining and sharing joint responsibilities between all health care providers by integrating the patient to adapt his/her care according to medication nonadherence, side effects, unreached therapeutic goals, or other issues. 	<ul style="list-style-type: none"> No consultation between physicians, pharmacists, and patients.

*Twenty-seven pharmacies that had included at least one patient.

†Nineteen pharmacies that sent reports to the physicians.

‡Thirty-three physicians who responded to the final questionnaire.

RESULTS

The Exploration Stage

The Federal Office of Public Health and health insurance stakeholders supported the project, and an interprofessional steering committee of 10 members was established (Figure 1). Communication of the project began with the official announcement of the Federal Office of Public Health, and then, various associations agreed to publish a specific announcement, mainly health care professional associations and patient journals. The Federal Office of Public Health's official support was perceived by pharmacists as facilitating the communication and collaboration with patients and physicians and supporting their credibility.

The Preparation Stage

Pharmacists, who contacted physicians to inform them on the project, mainly selected local physicians, referent physicians of their eligible patients, participants in the same interprofessional quality circle (Quality circles bring together five to eight physicians and pharmacists to develop collective evidence-based guidelines to improve physician-prescribing behavior and to put these recommendations into practice.²⁹), or the largest prescribers of antidiabetics to their patients. Several methods were used to initiate the first contact: mail (n = 13), telephone (n = 8), face to face (n = 13), e-mail (n = 6), and fax (n = 3). Pharmacists either met the physicians personally (n = 14) or presented the project at a quality circle meeting (n = 7). Two pharmacies (represented by two different pharmacists) invited 200 physicians by mail to an information meeting to present the project, but no physician came.

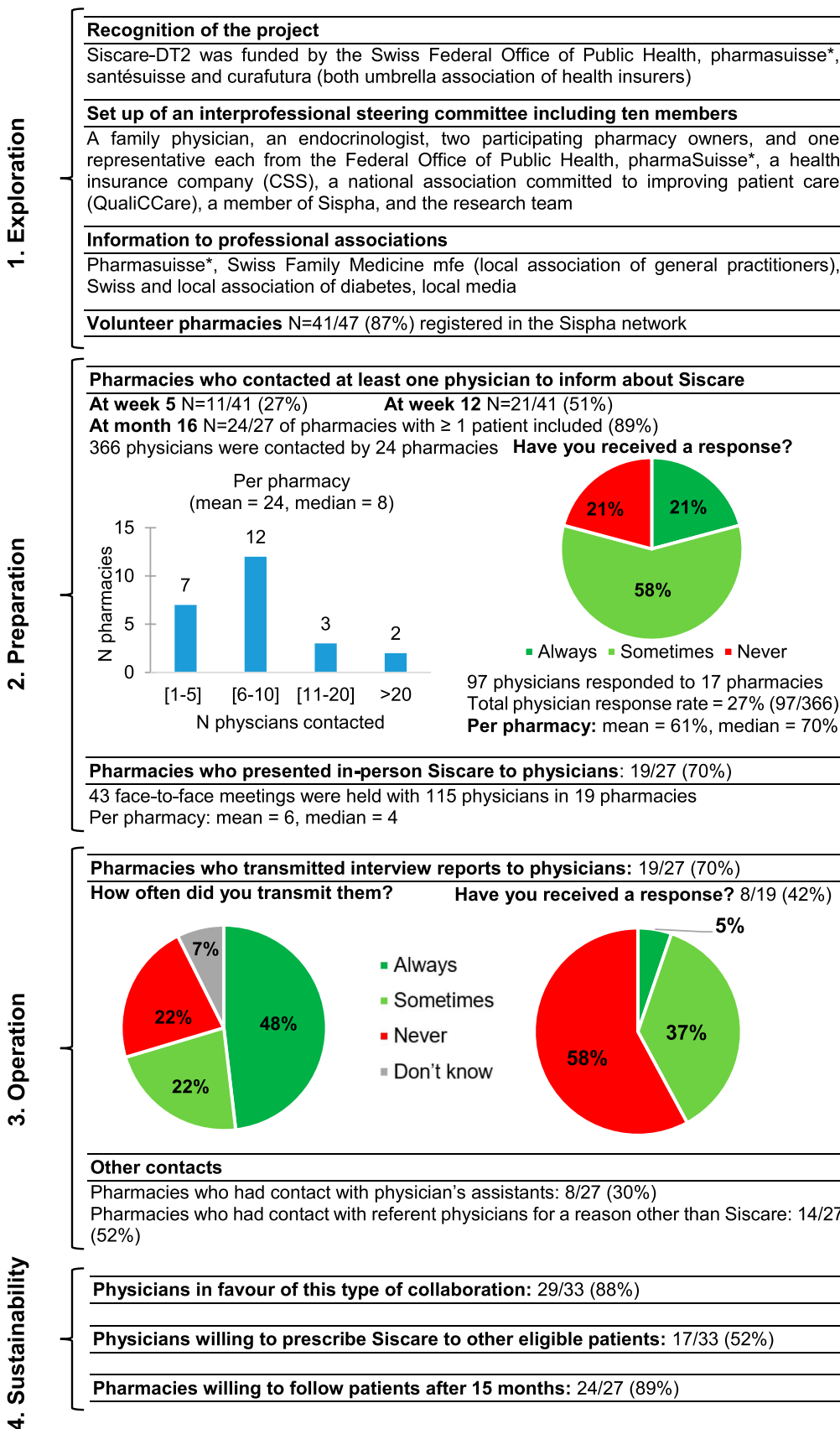
In the first round of focus groups, pharmacists reported that collaboration was almost nonexistent because the response rate of physicians to information or invitation to a meeting was quite low (Figure 1). The response rate of physicians (calculated by dividing the number of physicians who responded to this first contact of the pharmacist by the number of physicians contacted) was equal to 27%. The relationship appeared to be one-sided, which was demotivating for pharmacists.

The usefulness of communication material to promote collaboration with the physician was mostly perceived as “very useful” or “somewhat useful” by the pharmacists, with the exception of the information support for the physician's assistants, because it was underused (Figure 2).

The Operation Stage

A total of 212 patients were included by 27 pharmacies. Physician specialty was specified for 184 of 212 patients, whereas 28 patients had missing data. Referent physicians were a general practitioner for 77% (141/184) of patients, a diabetologist or endocrinologist for 18% (34/184), and another specialist for 5% (9/184) (eg, infectious disease specialist or cardiologist). Overall, 89 physicians (71%) followed one patient, 23 (18%) two patients, 5 (4%) three patients, 6 (5%) four patients, and 2 (2%) five patients.

Collaboration primarily occurred through the unidirectional transmission of information from the pharmacist to the physician (level 1: 70% (19/27) of pharmacists transmitted interview reports to physicians), bidirectional exchange of information sometimes occurred (level 2: 42% received physician responses), and concerted measures of treatment objectives took place occasionally (level 3) (Table 2). An example of level 2



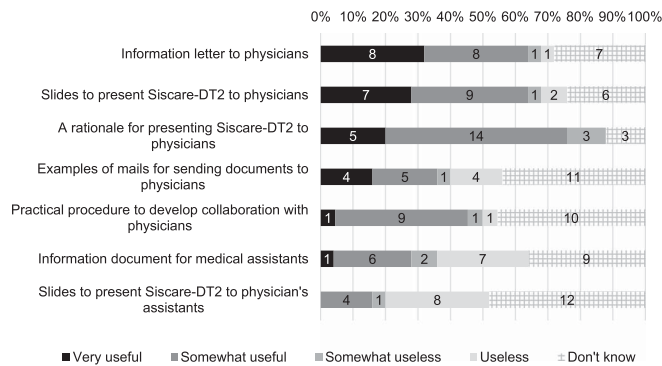


FIGURE 2. Evaluation of pharmacists' perception on the usefulness of the communication material to promote collaboration (n = 25 pharmacies).

collaboration occurred when pharmacists and physicians exchanged information about their patients: a patient suffered from side effects of his/her medication and was not fully adherent; therapeutic objectives were not reached. The pharmacist discussed this with the physician. A change in dose regimen allowed the patient to reduce his/her side effects and reach his/her therapeutic objective.

The methods used to send the interview reports included fax (n = 10), mail (n = 8), and e-mail (n = 6). Sixteen pharmacies used the automatic template of the web-based platform, and three pharmacies developed their own shorter template. Several strategies were used by pharmacists to encourage physician response, for example, follow-up questions at the end of the report and notification call before sending the report. In some cases, reports were sent only when a problem was encountered (eg, medication adherence, adverse reaction, or failure to achieve therapeutic objective). Half of the physicians (55%, n = 18/33 respondents to the final questionnaire) discussed the program with their patients during the medical visit, and 67% of physicians (22/33) found the report useful.

In the second round of focus groups, pharmacists reported being demotivated by the lack of response after sending reports to the physician. In addition, pharmacists felt that they could not easily contribute to further patient management because there were already multiple health care professionals involved, such as a general practitioner, a diabetologist, and a nurse specialized in diabetes. Pharmacists initially doubted their added value in the management of the patient's care, but after several trainings and after having initiated Siscare, this feeling faded. Interprofessional collaboration was deemed satisfactory for only two pharmacists who favored a pre-existing relationship and the organization of a face-to-face meeting before the inclusion of patients. Few pharmacists had any contact with the physician's assistants.

The Sustainability Stage

Among physicians who responded to the final questionnaire, 67% (n = 22/33) perceived the program as beneficial for their patients in terms of medication adherence and/or medication management. Regarding willingness to prescribe Siscare, 52% (17/33) of physicians said they strongly or fairly agree, whereas 36% said they strongly or somewhat disagree (n = 6) or totally disagree (n = 6).

Among the 68 patients who responded to the satisfaction questionnaire, 74% (n = 50) considered the collaboration

between their pharmacist and referent physician to be relatively present to very present, and 44% (n = 30) stated that it improved their management. A clinical vignette of a patient included in Siscare-DT2 is described in Figure 3. In the focus groups, pharmacists declared that the remuneration system for the program and the lack of interactions on the web-based platform with physicians were obstacles to the sustainability of interprofessional collaborative practices through Siscare.

DISCUSSION

Despite multiple implementation strategies, collaboration primarily occurred solely through the unidirectional transmission of information (level 1), bidirectional exchange of information occurred sometimes (level 2), and concerted measures of treatment objectives took place occasionally (level 3). Pharmacists expressed frustration because physicians did not often respond to the interview reports. No physician prescribed Siscare, but no objections were identified, and seventeen physicians (51%) declared that they were willing to prescribe Siscare to other eligible patients.

To increase the adoption of Siscare by pharmacists and physicians, more communication and exchange is needed so that health care professionals are aware of the existence and benefits of these collaborative practices.³⁰ This has already begun with the inclusion of Siscare in the Swiss catalogue of models of good interprofessional practice.³¹ Siscare is an original patient support program with the intervention of the community pharmacist as a trigger factor. The early inclusion of physicians in the development of patient-centered interprofessional services, including defining the roles and responsibilities, is paramount to fostering higher levels of collaboration.^{32,33} Moreover, in coordination with the pharmacist, the physicians must find the added value and relevance of the service for themselves and according to his/her patient's needs so that this stimulates motivation and the willingness to be proactive.

The results highlight the need for substantive training in interprofessional practice because of the low level of interactions between pharmacists and physicians. There is a need for joint pregraduate and postgraduate education of health care professionals to face this barrier. Today, the number of universities offering both lectures and practical courses to health care students such as pharmacists, nurses, physicians, dentists, and physiotherapists is increasing,³⁴⁻³⁶ but the amount of time devoted to this education in formal pharmacy curricula remains low.^{37,38} There is a need to allocate increased resources to initial and continuing interprofessional education.³⁹ In Switzerland, the Swiss Inter-Professional Education Course (SwissIPE) association was founded in 2018 to promote interprofessional collaboration and leadership in integrated ambulatory care and nursing homes with health insurance and other ambulatory care facilities; it offers training in interprofessional teamwork and joint leadership.⁴⁰

The interprofessional collaboration through Siscare focused on the collaboration between the pharmacist and the referent physician. Nevertheless, this bilateral collaboration should then be integrated into the patient's overall care path by integrating the other health care professionals involved. Patients with T2D often have other chronic diseases requiring the involvement of other specialists. Medication nonadherence is a topic rarely discussed in medical visits and is often underestimated by physicians, mostly because of the limited time spent on this issue

- 73-year-old retired man with a high level of education
- Type 2 diabetes diagnosis > 10 years, hypertension, already had a heart attack
- Motivated to be adherent, supported by his social network, fears having to switch to insulin and is concerned about the duration of his treatment and its effects, especially on his kidneys, willingness to reduce the number of medications
- A referent physician (general practitioner), regular patient of a network pharmacy
- Reason for Siscare inclusion: to obtain support in the daily management of his treatment/illness from a professional other than his referent physician, curious about how interprofessional collaboration could contribute to his care.
- Treatment plan at inclusion:

Id	Drugs	Indication	Regimen	Monitoring
D1	Acetylsalicylic acid tablet 100 mg	Myocardial infarction	1-0-0	Electronic monitoring (electronic pillbox)
D2	Clopidogrel 75 mg		1-0-0	
D3	Candesartan/Hydrochlorothiazide tablet 16/12.5 mg	Hypertension	1-0-0	
D4	Vildagliptin/Metformin tablet 50/500 mg (> 4 years)	Type 2 diabetes	1-0-1	

of clinical outcomes, medication adherence (see Appendix 2 for adherence graphs), and clinical decisions

	Baseline	6 months	12 months	18 months	22 months	24 months
HbA1c	7.1%	6.5%	7.0%	7.0%	-	-
Adherence to OAD^o	72%	80% D1 discontinued by physician	99% Routine reinforcement	97%	34% Trips abroad and jet lag make it difficult to take 3 tablets /day	100%
Clinical decisions*	Siscare initiated by pharmacists in agreement with patients and physicians before intensifying diabetes treatment	D4 switched to metformin 500 mg twice daily	Metformin 500 mg was increased to three times daily	-	Diet recommendations by the pharmacist	Switch to metformin 850 mg twice daily to reduce the number of tablets
BMI	26.9 kg/m ²	-	-	-	-	25.1 kg/m ²
Siscare content	<ul style="list-style-type: none"> • 9 pharmacist-patient interviews • Reports were sent to the referent physician after each interview and followed by a telephone call when a medical visit was deemed necessary and action was required. 					
Added value	<ul style="list-style-type: none"> • The patient perceived a real benefit from the electronic pillboxes, and the interviews helped building new habits. He did not feel controlled but encouraged and supported. The patient was reassured about his treatment, he paid attention to his diet, and concerns faded away. Siscare has allowed him, through better adherence, to lighten the treatment and reduce the risk of side effects. He appreciated the availability of the pharmacy team to talk about his concerns, and he felt that the collaboration greatly improved his care. To improve the program, the patient suggested organizing a joint meeting with his referent physician and his pharmacist. • The pharmacist felt the relationship with the patient and the physician was improved. Discussing therapeutic goals with the physician and exploring the patient's feelings allowed the pharmacist to propose a sound course of actions and to adjust her intervention. These therapeutic relationships are perceived as a reward for the pharmacist by creating a special bond of mutual knowledge that goes beyond the conventional relationship. • The physician found it crucial that pharmacists and physicians be trained in therapeutic patient education and share the same relational approach so that the patient could benefit fully from interprofessional collaborations. 					

^o Clopidogrel and antihypertensive medications were taken regularly in the morning

* Pharmacist, physician, and patient agreements

FIGURE 3. Clinical vignette of a patient included in Siscare-DT2.

during training.^{41,42} Thanks to their pharmacological knowledge, pharmacists should play a key role in identifying patients at risk of suboptimal medication use, even if the different health care expertise, for example, specialized nurses, in supporting adherence can complement each other.^{13,43} Therefore, it is essential to open a discussion with all health care professionals involved in patient management and to define their scope of action adapted to the local and interpersonal context.^{14,32} The Swiss interprofessional platform has elaborated a set of 21 criteria concerning the development and implementation of interprofessional projects, which can improve the success of such projects when used from the outset.³³

Appropriate financial resources are a key element in the sustainability of interprofessional collaboration in patient support programs.³² In Switzerland, physician tariff headings include fees for the coordination of care in the absence of the patient (eg, review of the patient's file, obtaining information from third parties, and discussions with therapists and caregivers) but are limited to a maximum of 60 minutes every 3 months for patients who need it.⁴⁴ However, for pharmacists, there is a reimbursable fee for Siscare that pays for work at the pharmacy but does not include collaboration fees.⁴⁵ Consequently, the Swiss billing system does not encourage interprofessional collaboration because there is no specific funding to pay for coordination between health care professionals, but only a few isolated tariff headings. The Federal Office of Public Health and the Swiss association of pharmacists (pharma-Suisse) are currently discussing the development of a new system of performance-based pharmacy remuneration for 2022, including individual remuneration based on the degree of effective care and allowing for adequate pricing.⁴⁶

The lack of interactions of the web-based platform with physicians appeared to be an obstacle to the sustainability of interprofessional collaborative practices through Siscare, according to the focus groups results. Material resources must be developed to facilitate information exchange and collaboration between professionals.³² The web-based platform has been interconnected to the billing management system of the pharmacy, simultaneously allowing access to clinical information (guidelines and decision aids) and generating an automated treatment plan and an interview report written by the pharmacist. The information collected by each health care provider should be systematically shared through a joint and effective electronic medical record to improve collaboration and patient follow-up. To this end, incentives should facilitate the development of IT solutions that allow a secured exchange of data, also including the patient. In Switzerland, a strategy defined by the Federal Council to ensure and improve the quality of care is the increased use of e-health, including the introduction and active promotion of an electronic patient record.⁴⁷ This record includes data and documents important for further treatment and follow-up, made available to other health care professionals, according to the patient's consent,⁴⁸ whereas its organizational, technical, and safety aspects are regulated by a new law that came into force in 2017.⁴⁹ An association called CARA was constituted by five cantons as a joint force to establish a single e-health platform for health care providers and the population of Western Switzerland.⁵⁰ In addition, a cooperative society of pharmacists, Ofac, has bought the purveyor (IMAP) and intends to integrate Siscare care into its e-health platform Abilis, which will cover all Switzerland.

No physician had referred a patient to a pharmacy. Yet, physicians and pharmacists should complement each other in identifying patients who would benefit most from Siscare. Pharmacists can identify patients by considering medication adherence issues, side effects, polypharmacy, and aging through the pharmacy software; by discussing with the patient at the counter or in a counseling room; and when providing pharmacy services such as medication reviews.^{43,51} In parallel, physicians can be more attentive during events that may influence medication adherence, for example, new diagnosis or treatment and therapeutic goals not reached. Because Siscare is a generic approach, the recruitment pool can also be broadened by including other patients who would benefit from Siscare, notably patients who have other chronic diseases (eg, cardiovascular disorders, hypertension, HIV, oral oncology, transplant, or multiple sclerosis) or require critical short-term treatment (eg, patients with hepatitis C).^{52,53}

There are several limitations to this study. First, interprofessional collaboration outcomes were mainly analyzed in pharmacies that included at least one patient. They were the most innovative. Our results do not represent pharmacies that are less responsive to such programs. Second, the results were collected through questionnaires, audits or focus groups with volunteers at a point in time, and not along a continuum. In addition, only qualitative data were collected from pharmacists and not from patients because of time constraints, as originally planned. Future research should apply the same data collection strategies equally across all the participating groups, including physicians. Third, future studies should evaluate baseline measures of interprofessional collaboration to determine whether there is a change either in the quantity or in the quality of interprofessional collaboration during the project when compared with before the project. Therefore, some information may have been missed, and interprofessional collaboration underestimated. Fourth, participation was voluntary and offered to all 27 pharmacies for the second round of focus groups. The 11 participating pharmacies were perhaps the most motivated by the project. This could introduce a bias in our results.

CONCLUSION

In the French-speaking part of Switzerland, Siscare is an innovative patient support program that promotes interprofessional collaborative practices, with the intervention of the community pharmacist as a trigger factor. The pharmacist monitors and informs the referent physician about the medication adherence of the patient, whereas the physician retains leadership of the treatment. Nevertheless, despite multiple implementation strategies, interprofessional collaboration remained infrequent in this study, probably linked to the lack of physician active involvement from the beginning of the project because of time constraints, personal implication of the physician, and financial or IT barriers; however, Siscare was well received by the pharmacists, patients, and physicians. A promising start to the collaboration occurred in pharmacies, but active participation of the physicians is still lacking. Barriers to collaborative practice (financial and IT) and effective implementation strategies need to be further explored. Interprofessional collaboration is a clear need to improve T2D adherence and outcomes.

Lessons for Practice

- No objections from physicians and pharmacists were identified confirming the feasibility of collaborative practices in patient support programs, but successful implementation requires strong multidimensional and targeted strategies.
- The early inclusion of physicians or any other health care practitioner in the development of patient-centered interprofessional services is paramount. The collegial definition of the role and responsibilities of each health care provider, specific to each team, is the cornerstone for higher levels of collaboration required to the successful implementation of patient support programs.
- Health authorities should encourage hybrid implementation-effectiveness research protocols to increase original applications of theoretical frameworks. This type of study leads to increase general knowledge on implementation strategies for team-based health care practices and continuing professional development.

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