


Transitional shared decision-making processes for patients with complex needs: A feasibility study

Séverine Schussel  Filliettaz RN, MSc, PhD^{1,2}  | St phane Moiroux RN³ |
Gregory Marchand RN³ | Ingrid Gilles BSc, MSc, PhD¹ |
Isabelle Peytremann-Bridevaux MD, MPh, PhD¹

¹Centre for Primary Care and Public Health (Unisant ), University of Lausanne, Lausanne, Switzerland

²Association for the Promotion of Integrated Patient Care Networks (PRISM), Geneva, Switzerland

³Cit  G n rations Medical Home, Onex, Switzerland

Correspondence

S verine Schussel  Filliettaz, RN, MSc, PhD, Centre for Primary Care and Public Health (Unisant ), University of Lausanne, & the PRISM Association, Route de la Corniche 10, CH-1010 Lausanne, Switzerland.
Email: severine.schussele@prism-ge.ch

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Abstract

Introduction: Shared decision-making (SDM) processes, combining patients' and professionals' perspectives, are especially necessary for patients with complex needs (CNs) during their care transitions. In 2016, we started implementing inter-professional and interinstitutional SDM processes (IIPs) for patients admitted to a short-stay unit (SSU) for inpatient care and then followed-up by primary care providers. Two types of IIPs were identified: (a) iterative IIPs, and (b) meeting IIPs. These differed in terms of the timing of SDM processes: whereas the former were multilateral and iterative, meeting IIPs were simultaneous. However, the two processes had similar outcomes and participants had similar characteristics. The intervention included other components, such as CNs assessment and a care coordinator position. The present study aimed to assess the feasibility of the intervention's implementation.

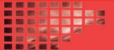
Methods: The intervention's feasibility was assessed using fidelity and coverage indicators. We collected data from the patients' records on (a) patients' and professionals' characteristics, (b) the fidelity (CNs evaluations and occurrences of IIPs), and (c) the intervention's coverage (types of IIPs, participants).

Results: The study included 453 patients between September 2017 and February 2019: mean age of 82.3 years, 65.6% women and 61.1% considered to have CNs. For patients with CNs, iterative IIPs and meeting IIPs occurred in 78.3% and 23.8% of cases, respectively. 35.1% of iterative IIPs and 8.8% of meeting IIPs for patients with CNs involved patients or their informal caregivers, inpatient professionals, primary care physicians and homecare professionals.

Discussion: These results showed that an intervention targeting the implementation of formalized IIPs for SDM in transitional care was feasible. However, to improve the evaluation of such interventions, other methods should be used to measure their appropriateness and acceptability. Additionally, assessing the effects of IIPs would legitimize their funding, supporting their sustainability and generalisability.

KEYWORDS

evaluation, health services research, interprofessional relations, multimorbidity, patient-centered care, transitional care



1 | INTRODUCTION

Thanks to socio-economic and technological advances, life expectancy is increasing everywhere. However, because of the concomitant increasing prevalence of chronic health conditions and social needs, healthcare systems worldwide are under pressure.¹ To overcome this, healthcare systems must adapt and even undergo radical changes towards more integrated care.² Among integrated care's focus areas, transitions between care settings and healthcare professionals stand out.² Indeed, they constitute critical periods during which information can be lost or misinterpreted. This can negatively affect the quality of care and patient satisfaction and increase hospital readmissions, avoidable morbidity and mortality.²⁻⁵ In addition, although poorly coordinated discharge management with primary care professionals can induce dissatisfaction among professionals and patients alike,⁶⁻⁸ as well as unclear clinical outcomes,^{9,10} the literature reveals only limited spontaneous collaboration between those inpatient and outpatient caregivers.^{11,12}

To offset such effects, transitional care - "a set of actions designed to ensure the coordination and continuity of healthcare as patients transfer between different locations or different levels of care within the same location"⁵ - is recommended. These actions have been shown to reduce the risk of rehospitalisation and increase patient and professional satisfaction.^{13,14} They are especially relevant for patients with complex needs (CNs), who may have multiple bio-psycho-social and environmental problems inadequately dealt with by uncoordinated services.^{5,15,16} Best practices for improved transitions encompass three main collaborative processes.^{5,6,13,17-21} First, the preferences and needs of both patients and informal caregivers must be assessed. Second, the multiple perspectives of the inpatient and outpatient professionals involved should be collected. Third, goals and actions should be prioritized through shared decision-making (SDM).^{15,22} Together, these three processes should form the basis for personalized care plans that give structure to the continuity of care.^{13,23,24}

Implementing improved transitions requires interventions that address the healthcare system's various components (eg, human resources, service delivery, governance, financing, information) and manage change.² Research around so-called "complex" interventions has produced varied methodological guidance,²⁵⁻²⁸ which, succinctly, recommend measuring different aspects of those interventions (eg, acceptability, feasibility, effectiveness, satisfaction) and investigating contextual elements and the mechanisms of change. Quantitative, qualitative and mixed methods—including realist evaluation²⁸—can be used for this purpose. For example, studies using various qualitative methods have identified both obstacles and facilitators to care transitions (eg, Reference 19). Also, evaluations of communication have measured how often inpatient care professionals reported communicating directly with outpatient care professionals.^{11,12} Finally, rather than look at transitions of care in general, evaluations of discharge management interventions have focussed on model fidelity among specific patient sub-groups and on how improved transitions affect qualitative^{19,29,30} and quantitative outcomes such as rehospitalisation.^{10,31-33}

1.1 | An intervention in Switzerland

Switzerland's healthcare system is renowned for its quality, equity and access to care.^{34,35} However, it is criticized for its fragmented organization,³⁴ which the following characteristics can explain: (a) the absence of a binding federal regulatory framework for integrated care across the country's 26 cantons; (b) complex financing and billing mechanisms precluding coordination between professionals; (c) the high value society puts on healthcare hyper-specialization; and (d) an array of care-providing organizations, ranging from individual practices, group practices and specialized care institutions (eg, homecare), to large hospital structures. Calls for improved care integration have been made to reduce this fragmentation.^{36,37} Numerous integrated care initiatives exist in Switzerland³⁸; among them is *Cité générations*, a private medical home in the canton of Geneva.³⁹ Besides the ambulatory care provided by physicians and allied healthcare professionals, including homecare, *Cité générations* includes a short-stay unit (SSU) for inpatients requiring fewer than 10 days of medical care, rehabilitation or geriatric assessment. The quality of the services delivered at the SSU was assessed in 2013-14. Outcome measures showed a low rate of potentially avoidable readmissions, high patient-satisfaction scores, an absence of premature death and few iatrogenic complications.³⁹

In 2016, *Cité générations* began an innovative intervention (Figure 1) to improve care transitions between the SSU and outpatient/homecare follow-up, especially for patients with CNs. The intervention involved the SSU, a non-governmental organization promoting integrated care in Geneva (PRISM)⁴⁰ and the Geneva public Institution for Homecare and Assistance.⁴¹ The intervention was developed using a change management approach⁴² inspired by action research methods⁴³ and including the following elements: field actors closely involved in the intervention's iterative design, testing various clinical activities, the removal of systemic obstacles and the reinforcement of facilitators.⁴⁴

The intervention relied on three major conceptual elements. First, patients and informal caregivers were considered as partners⁴⁵ involved in decision-making processes. Second, by acknowledging the interdependence of inpatient and outpatient professionals,⁴⁶ we implemented a transitional care model including improved communication and improved discharge management between these professionals. Third, CNs must be broadly assessed²² and dealt with through interprofessional and interinstitutional shared decision-making processes (IIPs) to design personalized care plans.

Building upon these concepts, by mid-2017 the intervention had stabilized and included the following major activities: new clinical SSU activities, funding, and establishing an SSU care coordinator.

- The evaluation of CNs: the operational definition of CNs was used for any patient with multiple bio-psycho-social and environmental needs and/or uncoordinated services that might benefit from IIPs.
- Implementation of two types of IIPs: (a) multilateral iterative coordination processes (iterative IIPs), and (b) simultaneous coordination meetings (meeting IIPs). The main difference between the two types was the timing of decision-making processes. However, the two processes had similar outcomes and characteristics in terms of the people involved (Table 1).

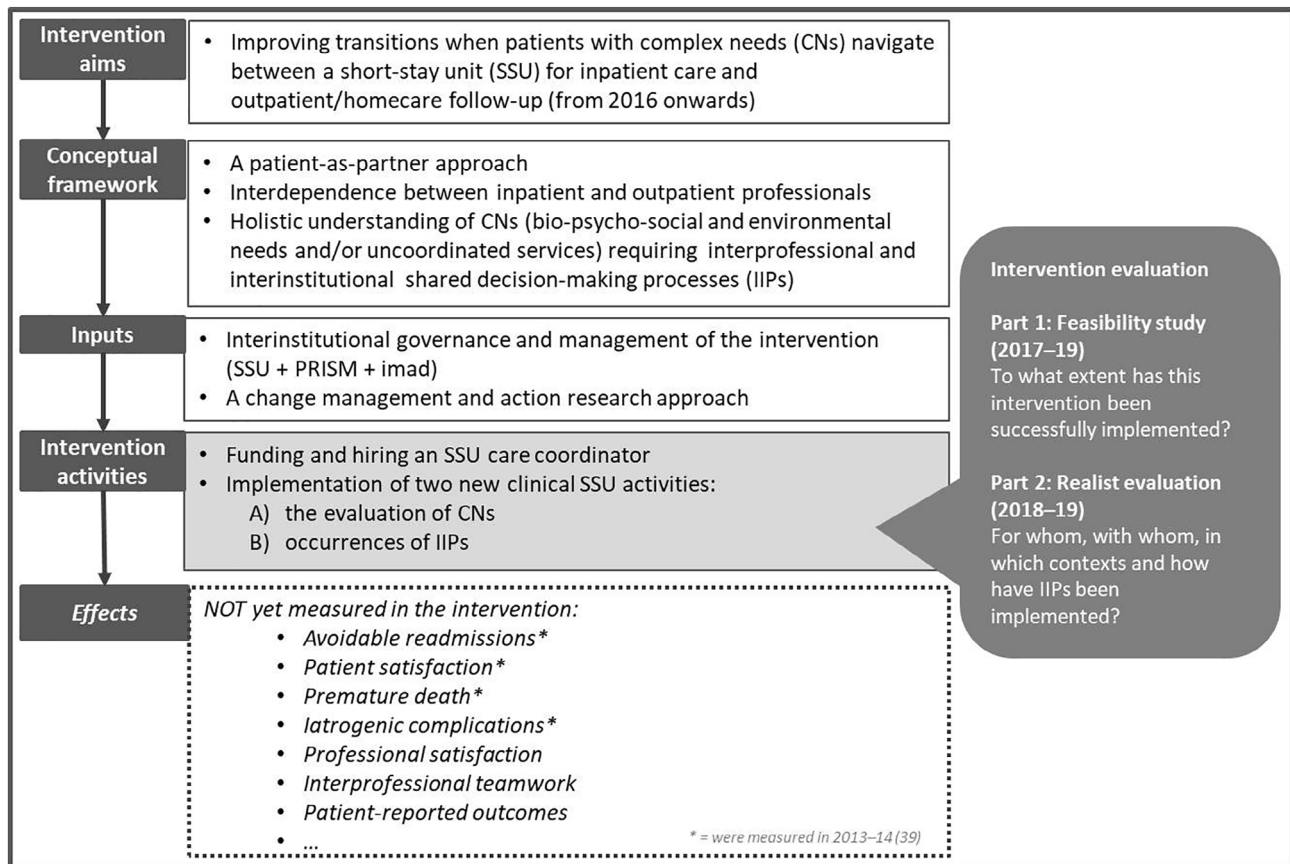


FIGURE 1 Logic model for the intervention and its evaluation

- SSU care coordinator: a position held by a registered nurse whose main tasks are to assess CNs and facilitate IIPs, all in close collaboration with patients, their informal caregivers and the relevant inpatient and outpatient professionals.

The intervention evaluation consisted of two parts (Figure 1). First, we aimed to determine the extent to which the intervention had been successfully implemented. To do this, we assessed the intervention's feasibility—this article's focus. Second, we conducted a realist evaluation that has been described elsewhere.⁴⁷

2 | METHODS

2.1 | Study design

We conducted a feasibility study focusing on the implementation of the intervention's activities, using and coverage indicators⁴⁸ (Figure 2).

2.2 | Population and setting

The populations targeted by the evaluation were patients and their healthcare professionals. The patients had all stayed at least one night

in the SSU, with no exclusion criteria. Healthcare professionals included staff who would be expected to participate in IIPs during a patient's stay: SSU care coordinators, SSU geriatricians, homecare nurses and primary care physicians.

2.3 | Measures

Between 1 September 2017 and 28 February 2019, we collected three categories of indicators for evaluating the intervention's feasibility: (a) population characteristics, (b) fidelity indicators, and (c) coverage indicators (Figure 2).

The variables collected for population characterization were: patient age at admission; gender; date of admission; length of stay; presence of CNs (yes/no); type of primary care physician's practice (public/private/other); and type of homecare organization (public/private).

The variables collected for the intervention's fidelity were: evaluation of CNs (yes/no); occurrence of iterative IIPs (yes/no); and occurrence of meeting IIPs (yes/no). Other intervention activities were monitored as follows: (a) the continuity of financial resources allocated to intervention management and the care coordinator's salary; (b) the total number of nurses who held the position of SSU care coordinator over the period.

To assess the intervention's coverage, we measured which IIPs had occurred for patients with CNs. We also collected data on the types of persons involved in the IIPs (patients, informal caregivers, SSU staff, primary care physicians, homecare professionals). For comparative purposes, we collected the same data for patients without CNs.

Most variables were extracted from patients' electronic health records. Other data were extracted from intervention management documents. Details on the variables collected and their sources are available in Data S1.

TABLE 1 Description of interprofessional and interinstitutional shared decision-making processes (IIPs)

	Multilateral iterative coordination processes (iterative IIPs)	Interprofessional and interinstitutional coordination meetings (meeting IIPs)
Persons involved	Non-professionals: at least the patients or their informal caregiver/representative Professionals: at least two persons from two different professional groups OR at least two persons from the same professional group but from two different institutions	
Shared decision-making (SDM) processes	Iterative: multilateral processes can occur in real-time (ie, physically, by phone or using other methods), or via email and other asynchronous methods (ie, fax)	Simultaneous: at least three people actually meet
Outcomes	At least one shared goal identified by the SDM processes	
Indicators	Iterative IIPs occurred during the SSU stay: yes/no <ul style="list-style-type: none"> Actors involved Outcome present: yes/no 	Meeting IIPs occurred during the SSU stay: yes/no <ul style="list-style-type: none"> Actors involved Outcome present: yes/no

Abbreviation: SSU, short-stay unit.

2.4 | Statistical analyses

Descriptive statistical analyses were performed on collected variables (eg, gender, type of professionals involved, IIPs). Chi-squared tests were performed to compare patients with and without CNs (eg, on IIPs). Student's *t* tests were performed to compare continuous variables (eg, age). Analyses used SPSS 25 software.

3 | RESULTS

3.1 | Populations

Throughout this 18-month feasibility study, 453 patients were admitted to the SSU. Most patients were over 80 years old (mean = 82.3; median = 84.8) and two-thirds were women. Almost all had a primary care physician, two-thirds received homecare services, and 277 patients (61.1%) were considered to have CNs. Patients with CNs were, on average, 3 years older than patients without CNs and they were more likely to stay at the SSU for more than 10 days (49.8% vs 23.3%, respectively). Additionally, patients with CNs had more homecare follow-up (91.3%) than those without CNs (58.1%). The proportion of patients with a public practice primary care physician was slightly higher among patients with CNs than among those without CNs. The majority of the 177 primary care physicians worked in private practices, caring for 89.6% of the SSU patients. Two nurses shared the care coordination position, and the SSU employed four geriatricians successively. Table 2 presents detailed population characteristics, and Table 3 presents patient characteristics according to their CNs.

3.2 | Intervention fidelity

All 453 patients were evaluated for CNs. IIPs occurred for 295/453 patients. Iterative IIPs and meeting IIPs occurred in 65.1% and 15.0% of cases, respectively. The funding allocated for intervention management and care coordinators' salaries remained stable throughout the period studied. The number of SSU care coordinators was gradually reduced from two part-time nurses to one full-time nurse from

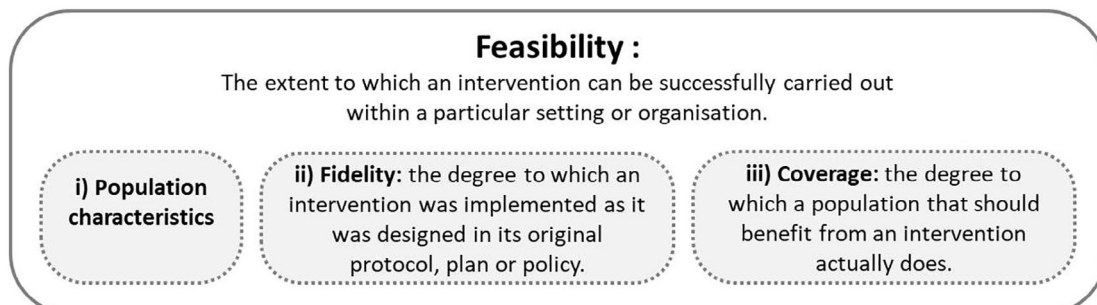


FIGURE 2 Categories of indicators used and their definitions⁴⁸

TABLE 2 General characteristics of SSU populations

	n	% or means (SD)
SSU patients	453 ^a	
Women	297	65.6%
Age (mean)		82.3 years old (10.8)
Length of stay (mean)		9.9 nights (6.9)
Type of primary care follow-up for SSU patients		
Follow-up by homecare	355	78.4%
Follow-up by a public homecare organization	256	56.5%
Follow-up by a primary care physician	445	98.2%
Primary care professionals involved		
Homecare organization	8	-
Public homecare organization	1	-
Nurses from public homecare organizations	122	-
Private homecare organizations	7	-
Primary care physicians	177	-
Public practice physicians	16	-
Private practice physicians	158	-
Physicians practising outside the canton of Geneva	3	-
SSU staff involved		
Care coordinators	2	-
Geriatricians	4	-

Abbreviations: SD, standard deviation; SSU, short-stay unit.

^aThe total of 453 SSU patients represents 371 different individuals: 316 had a single stay, 55 stayed at least twice.

autumn 2018 onwards. However, this did not affect the actual care coordination resources available at the SSU.

3.3 | Intervention coverage

IIPs occurred more frequently for patients with CNs than those without CNs (Table 4). Iterative IIPs occurred for almost 80% of patients with CNs, but for less than half of patients without CNs. Meeting IIPs occurred for almost a quarter of patients with CNs, but for only 1% of those without CNs. Further analyses showed that there were more IIPs for patients with CNs who stayed in the SSU for more than 10 days than for those with shorter stays: iterative IIPs in 89.1% and 67.6% of cases, respectively ($\text{Chi}^2 = 18.9, P = .0001$), and meeting IIPs in 33.3% and 12.2%, respectively ($\text{Chi}^2 = 9.65, P = .0001$).

Analyses of professionals involved in IIPs for patients with CNs ($n = 251$) who were follow-up by both primary care physicians and homecare nurses showed that the former were less frequently involved in IIPs than the latter (Table 5). Primary care physicians and homecare nurses were involved in iterative IIPs for 46.3% and 68.2%

of the patients with CNs, respectively. A third of iterative IIPs involved both primary care professionals. Primary care physicians and homecare nurses were involved in meeting IIPs for 14.4% and 18.4% of patients with CNs, respectively. Both professional groups were involved in meeting IIPs for a little less than 10% of these patients.

4 | DISCUSSION

The intervention described in this work aimed to improve care transitions for patients with CNs between their stay in a SSU for inpatients and their outpatient/homecare follow-up. To this end, several activities were implemented, such as CNs assessments and interprofessional and interinstitutional shared decision-making processes (IIPs). The study presented aimed to determine the extent to which the intervention had been successfully implemented. We therefore conducted a feasibility study focusing on the intervention's various activities.

We found that funding for salaries and intervention management was secured, that the SSU care coordinator position was filled throughout the period examined, and that all the SSU patients were assessed for CNs. The study also had four main findings: (a) the majority of patients had CNs; (b) IIPs occurred for the majority of patients with CNs and to a lesser extent for patients without CNs; (c) the majority of IIPs for patients with CNs were iterative, whereas meeting IIPs occurred for a quarter of these patients; and (d) although the majority of iterative IIPs for patients with CNs involved homecare professionals, only a minority of meeting IIPs for patients with CNs involved both primary care physicians and homecare professionals. We believe that these findings demonstrated the intervention's feasibility. However, they also raised various issues about the intervention itself, its evaluation, its sustainability and its generalisability.

4.1 | Improving the intervention

Despite the fact that complexity is ontologically difficult to standardize,⁴⁹ many clinical instruments seek to measure it.^{50,51} However, at the beginning of the intervention, we could not find a tool including interprofessional and interinstitutional needs assessments. Alternatively, our CNs assessment relied on an operational definition. Lately, however, new assessment instruments have emerged in Switzerland⁵⁰ and elsewhere.⁵² Interestingly, they target broader bio-psycho-social and environmental needs assessment, including the coordination of healthcare services. They could be tested in the SSU to see whether they could improve transitional needs assessment. Such a tool could make the clinical coherence of transitional care—between the needs assessed and the needs addressed through IIPs—more visible and more measurable.

4.2 | Improving the evaluation

Although the methods chosen showed that IIPs were feasible for most of the patients targeted, our evaluation could neither explain why IIPs

TABLE 3 Characteristics of patients according to CNs (n = 453)

	CNs ^a : yes (n = 277) % or means (SD)	CNs ^a : no (n = 176) % or means (SD)	Statistical tests	
Gender				
Women	66.1%	64.8%	Chi ² = 0.08	P = .78
Men	33.9%	35.2%		
Age	83.7 y (9.9)	80.1 y (11.8)	t = 3.36	P < .001
Length of stay				
1-10 d	50.2%	76.1%	Chi ² = 18.9	P = .001
>10 d	49.8%	23.9%		
Type of primary care follow-up for SSU-patients				
Homecare				
Public homecare organization	65.3%	42.6%	Chi ^{2b} = 0.14	P = .71
Private homecare organization	26.0%	15.5%		
Without homecare	8.7%	42.0%	Chi ^{2c} = 70.9	P = .001
Primary care physicians				
Public practice physicians	10.5%	4.0%	Chi ^{2b} = 5.99	P = .014
Private practice physicians	87.7%	92.6%		
Other physicians ^d or without primary care physician ^e	1.8%	3.4%		

Abbreviations: SD: SD; SSU: short-stay unit.

^aCNs assessed by the SSU care coordinator following operational definition: any situation for which SSU answers “yes” to the question “Would this situation benefit from IIPs?”

^bChi² calculated for difference in CNs between patients with public and private follow-up.

^cChi² calculated for difference in CNs between patients with public, private or no homecare follow-up.

^dOther physicians = physicians with a practice outside the canton of Geneva.

^ePatients without primary care physician means, for example, a conflict between patient and physician prevented follow-up, the patient rejected medical follow-up or the physician had died.

TABLE 4 Implementation of interprofessional and interinstitutional processes (IIPs) according to CNs (n = 453)

	CNs: yes (n = 277)		CNs: no (n = 176)		Statistical tests	
Iterative IIPs						
Yes	(n = 217)	78.3%	(n = 78)	44.3%	Chi ² = 57.09	P = .000
No	(n = 60)	21.7%	(n = 98)	55.7%		
Meeting IIPs^a						
Yes	(n = 66)	23.8%	(n = 2)	1.1%	Chi ² = 32.89	P = .000
No	(n = 211)	76.1%	(n = 174)	98.9%		

Abbreviations: Iterative IIPs and meeting IIPs (see Table 1); SSU, short-stay unit.

^aAll patients with meeting IIPs also had iterative IIPs.

did not occur for all patients with CNs, nor whether there was something about a proportion of patients with CNs that made IIPs inappropriate. To explore these aspects, a realist evaluation^{28,47} of the intervention will be conducted to better understand for who, with whom, in which contexts and how IIPs have been implemented. These evaluation's findings will help address additional implementation outcomes, such as the appropriateness and acceptability⁴⁸ of IIPs.

We defined IIPs rather simply, through indicators such as the persons involved, their iterative or simultaneous processes, and the formalization of goals (Table 1). However, these SDM processes have been considered “circular and overlapping,”⁵³ especially for patients with CNs in transitional care.⁵⁴ Additionally, certain characteristics of

effective teamwork and interprofessional collaboration, such as “trust” and “mutual acquaintanceship,”^{55,56} might only be achieved through simultaneous processes like meeting IIPs. On the contrary, if those team characteristics are already present, then simple iterative IIPs might achieve interprofessional SDM. Future research on these questions, could use case studies⁵⁷ to describe the following aspects for various patients and professionals: the detailed processes of SDM, its different forms, the time needed and the interprofessional characteristics of the actors involved.

Finally, the effects of clinical activities could be measured (Figure 1) by building on the 2013-14 evaluation of the SSU³⁹ and collecting the same indicators again (eg, readmissions, patient

Type of IIP	People involved in IIPs	n	%
Iterative IIPs	• patients/informal caregiver, SSU, primary care physician, homecare	88	35.1%
	• patients/informal caregivers, SSU, primary care physician	28	11.2%
	• patients/informal caregivers, SSU, homecare	83	33.1%
	• patients/informal caregivers, SSU	7	2.8%
	Total	206	82.1%
Meeting IIPs ^b	• patients/informal caregivers, SSU, primary care physician, homecare	22	8.8%
	• patients/informal caregivers, SSU, primary care physician	14	5.6%
	• patients/informal caregivers, SSU, homecare	24	9.6%
	• patients/informal caregivers, SSU	1	0.4%
	Total	61	24.3%

TABLE 5 People involved in IIPs for patients with CNs (n = 251)^a

Abbreviations: Iterative IIPs and meeting IIPs (see Table 1); SSU, short-stay unit.

^aOnly patients with at least follow-up by a primary care physician and homecare professionals.

^bAll patients with meeting IIPs also had iterative IIPs.

satisfaction). Further indicators, such as professional satisfaction,⁵⁸ interprofessional teamwork,⁵⁹ patient-reported outcomes⁶⁰ or measures of SDM⁶¹ could improve this evaluation.

4.3 | Making the intervention sustainable

Although the systemic change management^{44,62} approach used to make this intervention sustainable is beyond this article's scope, the financial sustainability of hiring an SSU care coordinator is debatable—it will need long-term resources.² Whereas hospitals in Switzerland³⁴ bill based on Diagnosis Related Groups,⁶³ services like SSUs require ad hoc negotiations with relevant funders (eg, public authorities and health insurers).³⁹ To the best of our knowledge, daily rates for the SSU have been negotiated, but they consider neither CNs nor the interprofessional and interinstitutional resources required to manage them. To help support future negotiations, the effects of our SSU's clinical activities (CNs assessment, IIPs) should be investigated,⁶⁴ and to this end, the above suggestions (standardized CNs assessment, detailed IIPs for SSU patients, outcomes of IIPs) would help in the selection of appropriate indicators. Based on these, future services similar to the SSU could negotiate sustainable resources for CNs assessment and IIPs.

4.4 | Strengths and limitations.

The main strength of the present study's intervention was its evaluation of every inpatient in the SSU over 18 months. However, interpreting our results also means considering the following limitations. First, due to the heterogeneity in the criteria for CNs, we were obliged to categorize patients in a pragmatic way. Second, the absence of a consensual definition for IIPs led us to use an operational four-item

description. Third, by relying on an intervention with an action research design, we did not collect any baseline data. Nevertheless, given the limited literature on feasibility evaluation in the field,^{15,65} together with the results of our realist evaluation,⁴⁷ we believe that our study can act as a stepping stone to further research into transitional SDM processes.

5 | CONCLUSION

SDM processes incorporating the personal expertise of patients, informal caregivers and relevant professionals are needed to improve care transitions, especially for patients with CNs. Interprofessional and interinstitutional SDM processes (IIPs) involving all the relevant actors are required to reinforce the continuity of care for patients who navigate back and forth between inpatient and outpatient settings. Implementing an innovative intervention targeting IIPs in a short-term inpatient care unit appeared to be feasible, and it managed to include the patients targeted and their inpatient and outpatient healthcare professionals. Although there is room to improve the clinical activities introduced, the study's results suggest that a further evaluation of the intervention itself—for instance, using indicators of appropriateness and acceptability—could be valuable. Additionally, measuring the effects of IIPs would help to legitimize their funding and support their sustainability and generalizability.

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CONFLICT OF INTEREST

The authors declare no conflicts of interests concerning this work.

AUTHOR CONTRIBUTIONS

S.S.F. designed the study, with input from S.M. and G.M., under the supervision of I.P.-B. S.S.F., S.M., and G.M. collected the data. S.S.F. analysed the data, with support from I.G. S.S.F. prepared the manuscript, with input from S.M., G.M., I.G., and I.P.B.

ETHICAL APPROVAL

This study was approved by the Geneva Cantonal Research Ethics Committee (Req-2018-00801).

DATA AVAILABILITY STATEMENT

Raw data are available at www.zenodo.org, Nr 3679155.

ORCID

S  verine Schussel   Filliettaz  <https://orcid.org/0000-0001-7475-1120>

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SUPPORTING INFORMATION

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