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Integrated care and interprofessional collaboration in Switzerland: global overview and local implementation

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Centre universitaire de médecine générale et santé publique - Unisanté
Département Epidémiologie et Systèmes de santé,
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par

Séverine SCHÜSSELÉ FILLIETTAZ

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[Intégration des soins et collaboration interprofessionnelle en Suisse: état des lieux global et mise en œuvre locale]

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Abstract

Because of increasing life expectancy and ageing populations, health systems are under pressure. They must adapt to deal with increasing numbers of patients with complex needs, e.g. in terms of the number of chronic diseases and associated socio-economic difficulties. This is true for Switzerland as well as for the majority of industrialised countries.

In this context, care integration is recommended. It aims to strengthen the quality of care and to make better use of available resources by increasing the coherence and continuity of care, and by attending patients holistically throughout their life course. For this purpose, coordination and collaboration must be increased between the actors involved: the patients, their relatives and the various professionals, whatever the care structures (out-patient or hospital) used. We then speak specifically of strengthening interprofessional and interinstitutional collaboration. Even if care integration seems obvious, several aspects of health systems hinder its implementation.

The aim of this thesis is to extend knowledge of care integration in Switzerland, more specifically in the areas of interprofessionality and interinstitutionality, with the aim of supporting their development. For this purpose, four studies were conducted.

- The first study sought to identify care integration initiatives in Switzerland and to specify their characteristics. To this end, we conducted a cross-sectional study throughout the country between 2015 and 2016, and collected self-reported data through an online survey. The analyses show that there are a remarkably large number (n=155) and variety of care integration initiatives. This variety is probably linked to the Swiss federalist system. It must be supported to ensure that future initiatives are tailored to the regional particularities of our country.
- The second study explored the influence of the organisation and funding of care on the implementation of interprofessional collaboration. Based on the self-reported data collected in the previous cross-sectional study, we conducted moderated mediation analyses. These analyses showed that interprofessional collaboration implementation within integrated care was associated with organisational improvements, which in turn were associated with patient care improvements; this path no longer existed when financial barriers to integrated care were considered. These findings highlighted the need to improve organisational practices and reduce financial barriers to support the implementation of integrated care.
- The last studies evaluated an integrated care initiative conducted in the Canton of Geneva which aimed to formalise the implementation of interprofessional and interinstitutional processes (IIP) between an in-patient and an out-patient structure. This evaluation was conducted in two stages. First, between 2017 and 2019, we conducted a feasibility study, using data from the patients' records. Coverage and fidelity results show that IIPs were implemented for the majority of the 453 patients, but in a higher proportion of patients with complex needs. Second, a realistic evaluation was conducted. Interviews with patients and professionals showed the value of IIPs not only in addressing the complexity of patients' needs but, more broadly, in strengthening interprofessional and interinstitutional collaboration. However, IIPs happen in a general context of fragmentation and heterogeneity of practices that requires sustained efforts from actors implementing them as well as from organisations supporting them.

The results of this thesis show that care integration is progressing in Switzerland. However, obstacles to its wider dissemination remain. Implementing care integration initiatives targeting IIP is possible. However, it requires individual and organisational leadership, as well as change management.

Résumé

L'augmentation de l'espérance de vie et le vieillissement de la population poussent les systèmes de santé à s'adapter, afin de pouvoir prendre en charge des patients de plus en plus nombreux et présentant des besoins complexes, par exemple en termes de nombre de maladies chroniques, de difficultés socio-économiques associées. Ceci est vrai pour la Suisse comme pour la majorité des pays industrialisés.

Dans ce contexte, l'intégration des soins est recommandée. Son but est de renforcer la qualité des soins et de mieux utiliser les ressources disponibles, en augmentant la cohérence et la continuité soins et en accompagnant les personnes malades de manière globale, tout au long de leur parcours de vie. Il s'agit notamment de renforcer la coordination et la collaboration entre les acteurs impliqués : la personne malade, ses proches et les différent.e.s professionnel.le.s., quelles que soient les structures de soins (ambulatoires, hospitalières) utilisées. On parle alors spécifiquement de renforcer la collaboration interprofessionnelle et interinstitutionnelle. Bien que cette approche d'intégration des soins semble une évidence, plusieurs aspects des systèmes de santé rendent sa mise en œuvre difficile.

Cette thèse vise à étendre les connaissances de l'intégration des soins en Suisse, plus spécifiquement dans les domaines de l'interprofessionnalité et de l'interinstitutionnalité, dans le but de soutenir leur développement. Dans ce but, quatre études ont été menées :

- La première étude a cherché à identifier les initiatives d'intégration des soins en Suisse et à préciser leurs caractéristiques. Dans ce but, entre 2015 et 2016, nous avons mené une étude transversale dans tout le pays et collecté des données auto-reportées au moyen d'un questionnaire électronique. Les analyses ont montré que les initiatives d'intégration des soins étaient remarquablement nombreuses (n=155) et diverses. Cette diversité est probablement liée au système fédéraliste helvétique. Elle doit être encouragée pour garantir l'adéquation des futures initiatives aux particularités régionales de notre pays.
- La deuxième étude a exploré l'influence de l'organisation et du financement des soins sur la mise en œuvre de la collaboration interprofessionnelle. Sur la base des données auto-reportées collectées dans l'étude transversale précédente, nous avons mené des analyses de médiation modérée. Ces analyses montrent que la collaboration interprofessionnelle est associée à des améliorations organisationnelles, et que ces dernières sont ensuite associées à une amélioration des soins aux patients. En présence d'obstacles financiers toutefois, ces associations n'existent plus. Ces résultats soulignent la nécessiter d'améliorer les pratiques organisationnelles et de réduire les obstacles financiers pour soutenir la mise en œuvre des soins intégrés.
- Les deux dernières études ont évalué une initiative d'intégration des soins menée dans le canton de Genève, dont l'objectif était de formaliser la mise en œuvre de processus interprofessionnels et interinstitutionnels (PII) entre une structure stationnaire et l'ambulatoire. Cette initiative a été évaluée en deux étapes. Dans un premier temps, une étude de faisabilité a été menée sur la base des données tirées des dossiers électroniques des patient.e.s. Les résultats de couverture et de fidélité montrent que les PII ont été mis en œuvre pour la majorité des 453 patients, mais dans une proportion plus élevée pour les patient.e.s avec besoins complexes. Dans un second temps, une évaluation réaliste a été conduite. Les entretiens effectués auprès de patient.e.s et de professionnel.le.s ont montré l'intérêt des PII non seulement pour répondre à la complexité des besoins des patient.e.s, mais, plus largement, pour renforcer la collaboration interprofessionnelle et interinstitutionnelle. Toutefois, les PII s'inscrivent dans un contexte général de fragmentation et d'hétérogénéité des pratiques qui nécessitent des efforts soutenus de la part des acteurs qui les mettent en place et des organisations qui les y encouragent.

Les résultats de cette thèse montrent que l'intégration des soins progresse en Suisse, mais que des obstacles à sa plus large diffusion subsistent. Il est possible de mettre en œuvre des initiatives ciblant ces PII, mais elles nécessitent du leadership individuel et organisationnel, ainsi que de l'accompagnement au changement.

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Acronyms and abbreviations

(C)	Context
CG	*Cité générations*, medical home in Onex, Canton of Geneva, Switzerland
CCM	Chronic care model
CMO	Context-Mechanism-Outcome configuration
CN	Complex needs
(D)TL	(Deputy) team leader
FTE	Full time equivalent
HN	Homecare nurse
IIP	Interprofessional and interinstitutional process
imad	*Institution genevoise de maintien à domicile* (in French) ; imad is the acronym used throughout this thesis for the Geneva public institution for homecare and assistance
IC	Integrated care
IPC	Interprofessional collaboration
IT	Information technology
(O)	Outcome
PCP	Primary care physician
PRISM	*Association de promotion des réseaux intégrés de soins aux malades* (in French) ; PRISM is the acronym used throughout this thesis for the Association for the promotion of integrated care networks, Geneva, Switzerland
RE	Realist evaluation
(Rea)	Reasoning
(Res)	Resource
SD	Standard deviation
SDM	Shared decision making
SSIC	Swiss integrated care survey
UATm	*Unité d'Accueil Temporaire médicalisée* (in French); UATm is the acronym used throughout this thesis for the short-term in-patient care unit located in *Cité générations* - medical home in Onex, Canton of Geneva, Switzerland

1. Introduction

Worldwide, socio-economic and technological advances contribute to increased life-expectancy and population ageing. This impacts on the prevalence of chronic conditions and puts health systems under pressure (1,2). Numerous challenges have been identified, such as: misfits between systems designed to deal with acute health problems and increased needs for chronic diseases management, resource's shortages (financial, human), interinstitutional and interprofessional fragmentation, lack of care coordination as well as primary care weaknesses (1,3–5). To overcome these challenges and to be able to care for an increasing number of people with one (or several) chronic condition(s) and/or complex psycho-social needs, health systems must adapt. They must master these challenges and improve quality, access, efficiency and equity of care. In that context, a variety of models have been developed (6,7), supporting a shift towards more integrated care (8).

The introduction of this manuscript introduces integrated care (IC) and provides contextual elements that will be addressed in this thesis:

- Section 1.1 describes several conceptual frameworks and definitions relevant for IC;
- Section 1.2 presents issues relating to the implementation and to the evaluation of IC;
- Section 1.3 depicts the Swiss health system;
- Section 1.4 details a pilot IC intervention.

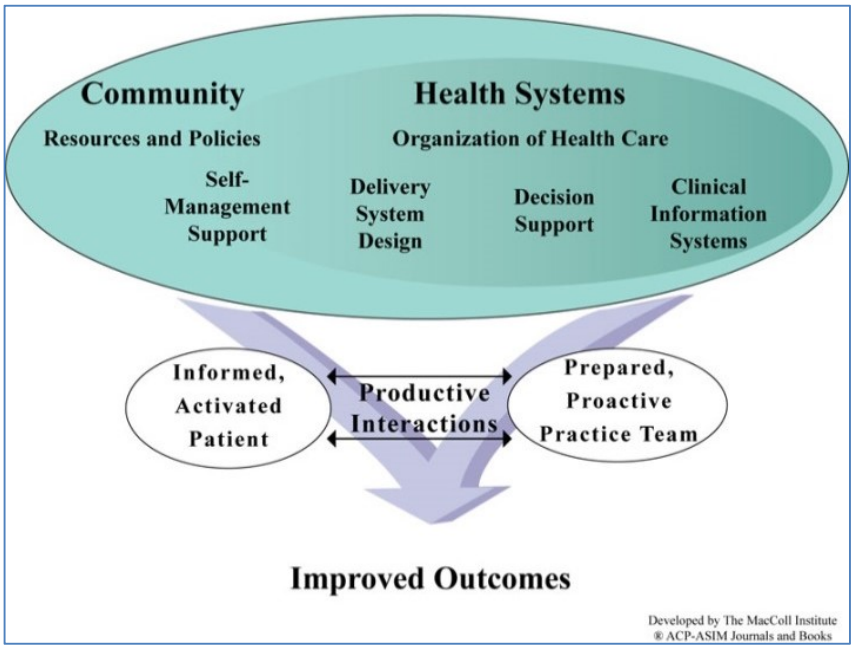
On this basis, the last sections of this introduction will present the objectives of the thesis and the structure of the manuscript itself.

1.1 Conceptual frameworks and definitions

Improving chronic care

Elaborated in the '70s, the Chronic Care Model (CCM) (9,10) suggests that improved interactions between patients and care teams produce better clinical and functional outcomes for patients with chronic conditions. However, this model stresses that improved interactions require transformations of the health system, at the community, organisation, practice, and patient levels (Figure. 1).

Figure. 1. The Chronic care model (CCM)



Source: www.improvingchroniccare.org (9)

Integrated care

Building upon the CCM, numerous key principles and typologies of integrated care (IC) have been developed (e.g.(11,12)). In short, IC is considered to be a "complex service innovation"(8) encompassing numerous micro-, meso- and macroscopic elements of a health system (13,14).

IC aims to improve three main areas: i) the quality of care delivery (coordination, continuity) and the users' experience; ii) the health of individuals and populations (morbidity, mortality, quality of life, reduction of adverse events), and iii) the efficiency and cost-effectiveness of the health system (8,11,15–17).

There are many definitions of IC, none of which are currently agreed upon. Goodwin (16) suggested using several definitions to reflect various perspectives. This approach is reflected in Table 1.

Table 1. Integrated care: various perspectives & various definitions

Waddington & Egger, 2008 (18)	"Integrated service delivery is the management and delivery of health services so that clients receive a continuum of preventive and curative services, according to their needs over time and across different levels of the health system."
Kodner & Spreeuwenberg, 2002) (19)	"[…] integration is a coherent set of methods and models on the funding, administrative, organisational, service delivery and clinical levels designed to create connectivity, alignment and collaboration within and between the cure and care sectors. The goal of these methods and models is to enhance quality of care and quality of life, consumer satisfaction and system efficiency for patients with complex, long term problems cutting across multiple services, providers and settings. The result of such multi-pronged efforts to promote integration for the benefit of these special patient groups is called 'integrated care."
Singer et al., 2011(20)	"[Integrated care is] patient care that is coordinated across professionals, facilities, and support systems; continuous over time and between visits; tailored to the patients' needs and preferences; and based on shared responsibility between patient and caregivers for optimizing health."
National Voices & Think Local Act Personal, 2013(21)	"[Integrated care means person centred coordinated care:] I can plan my care with people who work together to understand me and my carer(s), allow me control, and bring together services to achieve the outcomes important to me."

<u>Continuity, coordination and transitions</u>

Among the key words present in Table 1, care continuity can be of three types:

> *"Informational continuity means that information on prior events is used to give care that is appropriate to the patient's current circumstance.*
> *Relational continuity recognizes the importance of knowledge of the patient as a person; an ongoing relationship between patients and providers is the undergirding that connects care over time and bridges discontinuous events.*
> *Management continuity ensures that care received from different providers is connected in a coherent way. It is usually focused on specific, often chronic, health problems."(22)*

For care coordination, we agree with McDonald et al. who state that:

> *"Care coordination is the deliberate organisation of patient care activities between two or more participants (including the patient) involved in a patient's care to facilitate the appropriate delivery of health care services. Organizing care involves the marshalling of personnel and other resources needed to carry out all required patient care activities, and is often managed by the exchange of information among participants responsible for different aspects of care".(23)*

Care continuity differs from care coordination depending on the perspective adopted (22). Indeed, continuity refers to how a patient perceives services (24), while coordination characterizes the organisation of activities.

Care continuity and coordination might be disrupted, especially during transition phases (25,26), when patients transfer between different structures or different levels of care within the same structure, such as the patient's home, primary care providers, allied therapists, hospitals and long-term facilities. Indeed, inadequate transitions have been shown to jeopardize patient safety and

autonomy, thus leading to adverse events and rehospitalisation (8,25,27–29). Inadequate transitions can be due to deficient (inter)professional practices (30,31), to obstacles in (inter)institutional procedures (32,33), to variable patient engagement & empowerment (29,34–36), and to resistance to innovation (37). On the contrary, better transitions have been shown to improve (38,39) the aforementioned issues through: i) holistic assessment of patients' preferences and needs; ii) interprofessional and interinstitutional processes, between, for example, in- and out-patient healthcare providers; iii) inclusion of patients and caregivers in shared decision making processes (26,40–45).

Holistic assessment and complex needs

Most international nursing models (46–52), some medical models (53), as well as models used by social workers in Switzerland (54) for instance, encourage holistic assessments and consideration of biological, psychological, social and environmental elements to identify the causes to be treated and/or the needs to be answered. Together with "complexity (55–59)", "complex needs (26,40,60–64)", "complex patients (65–67)" and "complex situations (68)" are expressions that are used in the healthcare literature with heterogeneous definitions. For the purpose of this thesis, we come back to the epistemological grounds of complexity, stating that complexity can be defined as a propriety emerging from interacting elements (69,70) holistically considered. Thus, complexity in patient's life may emerge from a holistic analysis of various bio-psycho-social and environmental elements, including their individual characteristics (e.g. (instable) chronic disease(s), physical and/or mental disabilities, socio-economic difficulties) and characteristics of the healthcare system around them (e.g. multiple (uncoordinated) actors, lack of adequate professional resources, limited access to care) (40,41,58,61,62,71,72). To deal with this complexity, interprofessional and interinstitutional processes are needed (8,41). On this basis, we will use the operational definition of "patients with complex needs" for any interacting elements of patients and healthcare, which could benefit from interprofessional and interinstitutional processes.

Partnership between patients and professionals

Among other, the Montreal model (73) and the Swiss Interprofessional Charter of the Academy of Medical Sciences (74) both advocate for a partnership between patients, their families and health professionals. This partnership relies on "the existence and validity of both scientific and experiential knowledge" (75). By avoiding a paternalistic approach that would favour the professional's objectives, this partnership also promotes a patient-centred approach (76,77), focused on the latter's individual specificities, needs and values. Additionally, this model advocates for shared decision making (SDM), which is a process in which professionals and patients work together to selects treatment, tests, and care options, that are coherent with the patient's

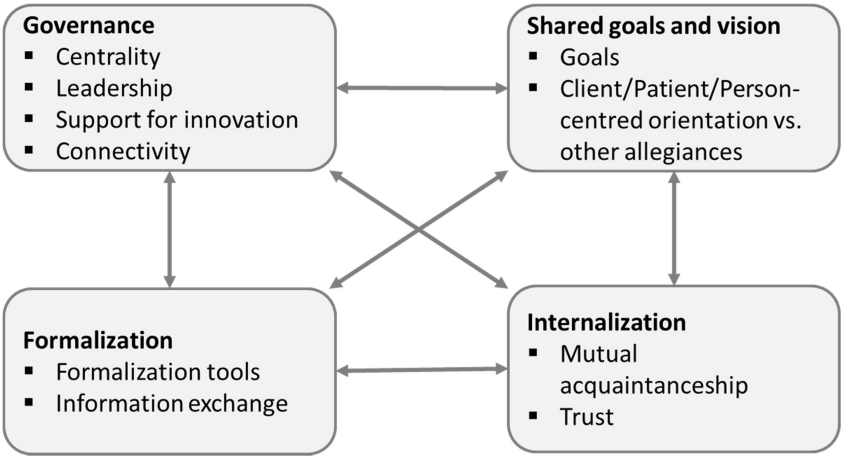
informed preferences (41,78). The goal of this SDM process is the achievement of optimal outcomes, not as an ideal of healing, but as co-constructed goals. It is the result of interactive and dynamic processes between interdependent and engaged actors (79,80). The level of engagement of patients and professionals is associated with various element (35,36,81,82) such as:

- Individual factors related to patients and their families: e.g., health status, previous experience with the health system, understanding of their roles, assessment of their skills, health literacy, socio-cultural level;
- Factors related to health care professionals (as individuals or as a team): e.g., interpersonal and communication skills, attitude and commitment to patient-centred care;
- Health system and/or health organisation factors: e.g. resources for consultation such as time and money.

Interprofessional and interinstitutional practices

Various authors have investigated the concept of interprofessionality (83–85). Interprofessional collaboration can be defined as "a set of relationships and interactions that allow [different] professionals to pool, share, and concomitantly use their knowledge, expertise, and experience to serve clients" (86). Interprofessional collaboration has different dimensions and indicators that interact with each other and that D'Amour et al. have modelled (Figure. 2).

Figure. 2. Four dimensional model and indicators of collaboration



Source: adapted from D'Amour et al 2008 (85)

This model reflects the complexity of the interprofessional phaenomenon. However, albeit previous work highlighting the fact that most interprofessional collaboration is at the same time also interinstitutional (33,87), recent publication has again underlined the need to better explore interinstitutional challenges of interprofessional practices (32). Indeed, the latter might be further complicated by interacting elements from both external and internal environments, such as

decision making levels and processes, geographic proximity, resources, scope of organisation's practice (32). Notwithstanding remaining knowledge gaps, interprofessional collaboration is considered to achieve positive outcomes (88–91): patients outcomes (such as increased quality of care and satisfaction), professional outcomes (such as reduced stress, improved visibility and motivation), or broader outcomes (such as reduced readmission to emergency departments or length of hospital stay). Because common practices are mostly mono-professional and mono-institutional, interprofessional and interinstitutional practices are innovative practices, thus requiring specific implementation approaches.

Diffusion of innovation

The theories explaining the diffusion of innovation and its sustainability in health services use concepts that have been constantly evolving since the 1960s. Initially described in 1962, Rogers' model postulated diffusion among individuals according to their characteristics of appropriation of innovation (92). Since then, the theory of innovation diffusion has moved from a model centred on the individual as the recipient of an innovation produced by others, to a much more systemic vision of the diffusion or even co-production of innovation (37,92). Following a systematic review focused on the diffusion of health services innovation, Greenhalgh et al. (37) conceptualized this overall vision and highlighted seven main elements that impact the spread of health services innovation. These are summarized in Table 2.

Table 2. Different elements impacting the spread of innovation in health services

• Characteristics of innovations that facilitate their diffusion
• Characteristics of adopters
• Communication and influence, including agents of change
• The inner context
• The outer context
• The implementation of the innovation and its sustainability
• Linkages between these various elements

Source: adapted from Greenhalgh et al. 2004 (37)

1.2 Implementing and evaluating integrated care (IC) interventions

Implementing integrated care interventions

Numerous large projects across Europe have been researching IC implementation, to benchmark IC (93), to scale IC up (94–96), and to draw lessons from sustainable models (97). Albeit precious contributions, these projects have confirmed what has been repeated about IC: "one size of integrated care does not fit all (98)". As shown by the various elements of the present conceptual

framework, implementing IC and its numerous components requires a broad understanding of healthcare systems (6,13) and of contextual issues (99,100) to manage the multiple interacting components involved (e.g. human resources, service delivery, governance, financing, information) (13). Accordingly, IC implementation requires so-called "complex" interventions including numerous components and actions at different levels (8,101,102). For this purpose, implementing IC needs change management (103) involving two principle sets of processes:

> *A step-wise progression of managerial tasks that come together to represent the core components of a change management plan ("management") and the ability to adapt these strategies for change in the context of the complex and multi-dimensional nature of practical reality ("environment"). Both tasks require key individuals with the managerial skills and both have a strong relationship-building component and are inherently inter-related.(103)*

When implementing IC, stepwise methodological approaches such as action research (104) can be used. Such approaches balance problem-solving actions with data analysis to understand underlying causes and guide future actions. Further recommendations regarding implementation highlight the importance of contextualized interaction between research and practice (Table 3).

Table 3. Recommendations for interaction between research and practice

• Awareness of the importance of using knowledge
• Development of users' skills to analyse and integrate new knowledge
• Formalized, organized and intense researcher/research user collaboration
• Production of contextualized data
• Provision of data in a usable format, focused on user needs
• Support for change in organisation s

Sources: Alla 2017 (105), Langer et al. 2009 (106)

These interactions between research and practice, aim to improve the translation of research findings (107) into practice, and support the concomitant involvement of both stakeholders and researchers (108,109) in implementation (110) and evaluation (111).

Evaluating integrated care interventions (IC)

Because of the conceptual heterogeneity of IC, and because of the numerous interacting elements involved, implementation and scaling-up of IC are challenging. As a result, IC also need specific evaluation methods, which raise numerous issues (101,102,112–124), the main elements of which are summarized below:

- The results (outcomes) obtained in an experimental context (in which all the micro-, meso- and macroscopic elements are controlled) are difficult to transfer to a "real life" context (125); experimental approaches tend to negate the effect of context on interventions and are not adapted (116) to provide evidence for their potential replication.

- Integrated care should be interpreted - and evaluated - not as isolated interventions, but as "complex strateg[ies] to innovate and implement long-lasting change in the way services in the health (and social care) sectors are being delivered and that involve multiple changes at multiple levels." (123)
- A purely linear causal model (Structure-Process-Outcome (126)) is difficult to apply to such complex interventions.

Evaluation approaches for IC must take into account several components, such as contextual elements, structures, resources and processes and mechanisms for change. They must also be able to measure different aspects of implementation (e.g. acceptability, feasibility, fidelity, effectiveness, satisfaction). Many scientists are currently working on these issues, and we will mention here only two of the most frequently cited models related to IC evaluation. While these two models go beyond the evaluation of outcomes, a) the first one highlights processes, and b) the second one digs into generative causation.

a) Process evaluation for complex interventions

The Medical Research Council (MRC, UK) (127,128) 2006 evaluation guidance (new version to be published by the end of 2020) suggests a process evaluation, providing a detailed understanding of how an intervention leads to outcomes, through processes. According to the MRC, following aspects are to be explored:

- Implementation: the structures, resources and processes through which delivery is achieved, and the quantity and quality of what is delivered.
- Mechanisms of impact: how intervention activities, and participants' interactions with them, trigger change.
- Context: how external factors influence the delivery and functioning of interventions.

According to the MRC, the intervention itself relies on a program theory modelling the causal relationships involved in the intervention. This program theory describes the structures, resources and processes through which delivery is achieved, and the quantity and quality of what is delivered. These causal relationships can be drawn from social science theoretical models and/or public health evidence, and/or experience. The implementation assessment focuses on how delivery is achieved and on what is delivered. The latter includes measures such as fidelity, dose, adaptations and reach (128).

b) Realist evaluation

Realist evaluation (RE) - a theory-driven approach first suggested by Pawson & Tilley in 1997 (129) - is considered suitable for the evaluation of complex interventions (48,53,56–58). It addresses

questions such as what works, for whom, under what circumstances and how. It thus seeks to explain how an intervention worked within a specific context, and which elements promoted or prevented the expected outcomes (130,131). RE relies on generative causation, by considering that "an action is causal only if its outcome is triggered by a mechanism acting in context" (129). RE seeks to explain this generative causation "by identifying particular patterns of interactions (130)", which will support the development of interventions with similar patterns (132). The various terms used in RE are defined in Table 4.

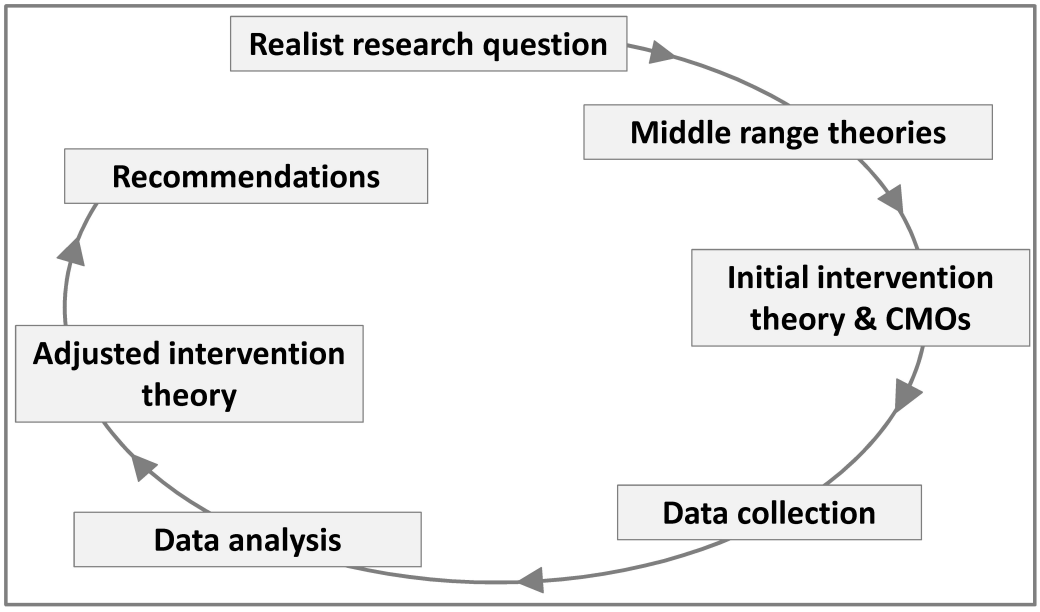
Table 4. Definitions used for intervention, context, mechanisms, outcomes and demi-regularities

Intervention	Uses various types of resources in order to achieve its objective.
Context (C)	Refers to those elements outside the resources provided by the intervention that may have a causal influence on the production of effects by the intervention.
Mechanisms (M)	Are responses of actors exposed to the resources provided by an intervention in a specific context; mechanisms can be disaggregated into resources (components introduced in a context) and reasoning ("stakeholders' volition" (133)): M(Resource) + C→M (Reasoning) = O (133).
Outcomes (O)	Are produced by the actors exposed to the resources provided by the intervention, in a specific context. Through ripple effect, outcomes may change the context over time.
Demi-regularities	Are semi predictable patterns of CMOs, i.e. regular occurrences of an outcome following the implementation of an intervention that triggers one or more mechanisms in a particular context.

Sources: Pawson & Tilley 1997 (129), Blaise et al. 2010 (132), Robert & Ridde 2013 (134), Jagosh 2018 (131), Gilmore et al. 2019 (130), Dalkin et al. 2015 (133), Pauton et al 2016 (135)

RE uses an iterative approach (129,131,133,136,137) (Figure. 3): first, an initial intervention theory and middle range theories describe the key contextual elements and the resources used, and outline initial mechanisms linking context and outcomes; second, various Context-Mechanisms-Outcomes configurations (CMO's) are elaborated on this basis and tested through a variety of methods, among which qualitative methods employing realist interview techniques (138); third, the analysis of data produces demi-regularities, defined as the regular occurrence of an outcome following the implementation of an intervention that triggers one or more mechanisms in a particular context (130,134); fourth, these demi-regularities enable the adjustment of the intervention theory and the formulation of recommendations resulting from the evaluation (130).

Figure. 3. Iterative steps of realist evaluation (RE)



Source: adapted from (129,131,133,136,139)

Even if RE studies should apply quality and reporting standards - such as the RAMESE's(125,139) - RE is an evolving field with considerable heterogeneity in the application of the principles presented previously. Indeed, researchers are still discussing concepts (e.g. issues around Mechanisms (133,140)) as well as practical questions (see RAMESES' mailing list(141)).

1.3 The Swiss health system and integrated care in Switzerland

The Swiss health system ranks very well internationally regarding quality of care, access, efficiency, equity and healthy lives (142). Patients are offered a large choice of services and access to all healthcare levels is unrestricted, unless specifically chosen (2).

Until 2015, when the present academic work started, federal strategies had been iteratively elaborated to address contemporary issues: i) a global health policy strategy (143) and related programs targeting chronic diseases and end-of-life care among others (144–146), and ii) programs to support family medicine (147). However, healthcare stakeholders faced numerous challenges calling for innovation: sub-optimal quality of care, gaps in coordination, increasing healthcare needs and expectations, high costs, reduced financial and workforce resources (1,2,148–151). In spite of these challenges, the development and the implementation of integrated care models was considered to be limited in Switzerland. In fact, innovation seemed to be restricted to health maintenance organisation s and physicians' networks implemented since the 1990's (148) and to chronic disease programs (145). This contrasted with the numerous initiatives identified in Europe and elsewhere at that time (3,93,96,97,152–156).

Several characteristics of the Swiss health system could explain this situation (149,157,158). Firstly, a tendency to fragmentation: i) a federalist organisation of the health system with divided

responsibilities between the federal, cantonal and local levels (i.e. Switzerland is often considered to have 26 slightly different healthcare systems, one for each of the 26 cantons); ii) a country divided into two main cultural areas (German-speaking, French/Italian speaking), iii) a mandatory health insurance scheme operationalized by more than 20 insurance companies, iv) complex financing mechanisms including numerous private and public sources, as well as high out-of-pocket contributions from patients, v) fee-for-service payment system, vi) financial and societal valorisation of hyper-specialization, vii) emerging interoperable IT communication tools. Secondly, in 2015, Switzerland had no formal federal regulatory framework for integrated care.

In 2015, despite the above mentioned issues, some cantons had considered integrated care policies (159), developed specific integrated care masterplans (160), or promoted the implementation of new financing measures (161). Interprofessionality was supported at several levels in Switzerland: in the federal law on health professionals (162), and at various level in the educational system (163–165). Finally, the Swiss population had increasingly been adopting managed care insurance schemes (166). In this context, local actors had been implementing various integrated care models across Switzerland, for example in the Geneva canton.

The Geneva health system and integrated care in 2015

Located in the French speaking area, the Geneva canton had close to 500'000 inhabitants in 2015, living on 245 km2, mainly in urban and sub-urban areas. In the Geneva canton, in 2015, around 1'800 physicians were active in out-patient care, most of them in private practices, ranging from individual to group practices, and from mono- to multi-professional structures such as medical homes. Practitioners could also be affiliated to one of the two physicians' networks present in Geneva (Delta (167), Remed (168)). Around 21'000 people had homecare, provided by slightly less than 3'000 professionals (169,170). Homecare in Geneva was provided by one large public organisation (imad, see below), and a dozen of smaller private structures (171). Numerous allied therapists, pharmacies and social services were active. There were 2'531 in-patient beds, distributed between one large university hospital (Geneva University Hospitals (172)) and several private clinics (173).

Among the numerous cantonal laws designing the Geneva health system, the 2008 law on the care network and homecare (174) had aims that resonated with integrated care concepts ().

Table 5. Aims of the 2008 Geneva cantonal law on the care network and homecare

• Safeguard the autonomy of persons whose state of health and/or dependency requires assistance and/or care, and to coordinate the answers to the needs of these persons throughout their life. • Setting up a care network that promotes homecare, encourages the participation of families and relatives, and provides the latter with necessary support.

Source : Republic and Canton of Geneva (174)

Several projects and cantonal structures emerged from this law, with support from the Geneva Cantonal Health Department(175) and, since 2013, from its responsible Ministry, Mr. Mauro Poggia, who was openly in favour of innovations in the Swiss health system (176,177). In this context, the implementation of the Geneva cantonal interoperable patient electronic record (178), a national pilot, was also further supported.

Within this context, some actors in the Canton of Geneva started implementing innovative models or reinforcing interprofessional practices. Three of these actors were involved in a common project that will be discussed in this thesis. They are described in the following sections.

Cité générations (CG)

Cité générations (Figure. 4) is a private medical home located in Onex, an urban area of the Canton of Geneva (179). CG is part of a large Swiss private healthcare group (Arsanté (180,181)). CG was opened in 2012 by two physicians, Dr Philippe Schaller and Dr Marc-André Raetzo, who had launched several other innovative care models in the Canton of Geneva since the '90s (180). CG offers an infrastructure (offices, administration) to private service providers (around 30 primary care physicians, numerous specialists and allied health professionals, a radiological centre, a pharmacy, an emergency department) and to public services. Besides ambulatory care, CG includes a short-term in-patient care unit (UATm throughout the text, for "Unité d'Accueil Temporaire médicalisée", in French). The UATm targets patients needing short stays (≤10 days) for medical care and/or geriatric assessment. In addition to providing an infrastructure, CG aims to facilitate interpersonal, interprofessional and interinstitutional practices. For this purpose, informal gatherings, formal events and projects take place regularly (180). Additionally, a common patient electronic record was implemented, which enables information sharing across professionals, time and space. This patient record is connected to the cantonal electronic patient record (178).

Figure. 4. *Cité générations*

Source: (182)

Geneva institution for homecare and assistance

The Geneva institution for homecare and assistance (imad throughout the text, for "Institution genevoise de maintien à domicile"(183), in French) is an autonomous public institution which provides homecare services and respite care(184). These services are provided by nearly 800 registered nurses, together with their colleagues from allied professions (nurse assistants, home helpers, occupational therapists, social workers), in collaboration with the patients' physicians, families and relatives. Imad professionals are distributed throughout the canton in approximatively 40 homecare teams, two of which are located in CG. Each team comprises one Team Leader, one Deputy Team Leader, approximatively 15 registered nurses, as well as nurse assistants / home helpers, and administrative staff. Persons with an imad follow-up have a specific "reference professional" whose role is described in Table 6.

Table 6. Role of imad "reference professional"

- Assess the situation and determine the needs and services to be provided (…).
- Establish, in partnership with the client, a contract and an intervention plan taking into account the resources of the natural and professional networks.
- Ensure the selection, coaching and planning of internal actors.
- Coordinate the natural and professional network (…).
- Be a privileged interlocutor of the client, stakeholders and partners involved in the situation.

Source : imad (183)

Imad uses its own patient record, which is connected to the cantonal electronic patient record (178).

PRISM association

The Association for the promotion of integrated care networks (PRISM throughout the text, for "Promotion des réseaux intégrés de soins aux malades", in French) is a Geneva-based non-profit association founded in 2009 (185). PRISM is supported by iterative grants from the Hans Wilsdorf Foundation (linked to Rolex watches)(186). PRISM's mission is to improve the care of patients with complex needs by developing contextualised integrated models of care, focusing on interprofessional and interinstitutional practices (IIP) (72,187–190). In order to facilitate the acceptability and to improve the sustainability of these models, collaborative approaches rooted in the field (microscopic level) (104,105) are targeted, using action research (104) and change management (14,191–193) methods. The systemic elements which hinder or facilitate the implementation of these models are systematically identified in order to induce changes at the micro, meso- and macroscopic levels of the Geneva and Swiss health systems (6,13,14). To these ends, partnerships are built by PRISM with different actors of the health system, such as homecare

organisations, primary care physicians, medical homes, hospitals, public health authorities, insurers, and educational facilities.

PRISM's Board includes representatives of various stakeholders of the Geneva health systems, among which the founder of *Cité générations* and the director of imad (185). Two part-time employees are in charge of operationalizing the projects, without being directly involved in care of patients: Nicolas Perone (physician) and Séverine Schusselé Filliettaz (SSF, nurse, author of this thesis).

PRISM-imad-Cité générations: common integrated care projects

Until 2015, PRISM, imad and *Cité générations* had been collaborating of two main common projects, with support of the Geneva Cantonal Health Department: i) the development and implementation of interprofessional and interinstitutional out-patient care teams (72,194); ii) the development and implementation of an interoperable shared care plan (195) implemented in the cantonal electronic patient record (178). In 2016, building upon these projects, a new common project was launched, which is described in the following section.

1.4 Interprofessional & interinstitutional transitional processes for complex needs patients: a systemic pilot intervention

Aims of the intervention

This pilot intervention aimed at implementing interprofessional and interinstitutional transitional shared decision making processes (IIPs) when patients with complex needs navigate back and forth between out-patient and home care to an in-patient setting.

The expected outcomes included i) primary outcomes specific to the transitional phase, ii) secondary outcomes regarding the primary care settings:

i) Improved patient safety, improved patient-centeredness, improved patient satisfaction, reduced adverse events and rehospitalisation; increased professional satisfaction.
ii) Increased desirability and feasibility of care coordination in the out-patient & homecare setting, through increased mutual acquaintanceship and trust, and formalized common patient-centred goals.

Setting of the intervention

The in-patient setting (UATm throughout the text, for "Unité d'Accueil Temporaire médicalisée", in French) was located within *Cité générations (CG)*. The UATm had 10 beds for patients who needed transitional medical care and/or geriatric assessment, but whose stay was not expected to last more than 5 days until they go back home to be further taken of by their informal caregivers, their

primary care physician, and further professionals (homecare, social services). While staying at the UATm, patients could be further taken care of by their primary care physician (PCP) and ambulatory professionals (such as homecare nurses), and/or by UATm professionals. In 2016, UATm's staff consisted of one business-hours nurse (80% full-time equivalent (FTE)), several 24/24 nurses assistants (196) (500% FTE), and one geriatrician relocated from the *Geneva University Hospitals* for six-months-tournus (50% FTE). The UATm used the same electronic health record as all practitioners in *CG*.

While the financing system of Swiss hospitals mainly relies on Diagnostic Related Cost-Groups (197) and on cantonal contribution (198), the UATm used a daily flat fee, with annual cantonal support (180). This flat fee included all catering, nursing and medical services, including investigations. In 2016, when the intervention started, this flat fee also included primary care physicians' services to UATm patients. The funding regime for homecare services to UATm patients was unclear.

Resources of the intervention

In 2016, the core intervention team included the author of this thesis (SSF, under PRISM governance), a nurse with significant experience in geriatrics, who started working at the UATm when this intervention was launched (Stephane Moiroux (SM), under *Cité générations* governance, salary partially paid by PRISM), and a nurse with significant experience in homecare (Lucile Battaglia (LB), under imad governance). In 2017, a second nurse with significant experience in geriatrics started sharing the UATm nurse position (Gregory Marchand (GM)). SSF was responsible for the overall project, planning, evaluation and global facilitation work with stakeholders. SM and GM were in charge of the field implementation at the UATm. LB was in charge of the facilitation work at the level of imad homecare teams. These three persons' respective hierarchies had been formally involved in PRISM's other projects for a minimum of three years and regular discussions about the UATm project took place within regular PRISM's Office Meetings. The core intervention team met approximatively once a week to manage the multiple aspects of the project. When relevant, various stakeholders (e.g. UATm geriatricians, other UATm staff, imad nurses and/or team leaders, primary care physicians, private homecare providers, patients) were part of these meetings or were met bilaterally. Two UATm geriatricians made significant contributions to the intervention: Dr Samuel Perivier (active 2016-2017) and Dr Raphael Masson (active 2018-2019).

Development of the intervention

Building upon the Chronic Care Model (6,9), on key principles for successful health systems integration (12), on the conceptual framework described in this manuscript, and on contextualized work that had been done in the Canton of Geneva in the field of IC by the same actors (72,190,195), we chose to focus on following elements:

1. Holistic assessment of patient needs
2. Interprofessional and interinstitutional processes
3. Formalized care plan & information systems
4. Financial resources
5. UATm nurse coordinator

To increase feasibility of these elements, this pilot intervention was designed as an action research (104) involving change management with identification and, where possible, adaptation of elements of the health system, at the macro-, meso- and microscopic levels.

SSF's double role of change agent and researcher could be both a source of tensions, and a source of improved insight (104,199). To mitigate the risk of interpersonal tensions, a great attention was given to the frequency and the quality of interactions with the field stakeholders. Source of disagreements and conflicting issues were discussed. To mitigate the risk of tensions between action and reflexion on action, SSF kept a journal, which helped keep track of issues to be dealt with and of their evolution. The same potential ambiguity applied to the two nurse coordinators (SM, GM), who were involved in the development of the intervention, in its implementation and in some of the data collection for its evaluation. We did our best to mitigate the risks by openly discussing collectively pending issues, by iteratively questioning actions, and by iteratively cross-checking data. We thus think that the elements presented in this manuscript tried to make the most of the co-involvement of research and practice (105,108,109).

1. Holistic assessment of patient needs

In a first phase of this pilot intervention, over 9 months (09.2016 - 05.2017), 65 UATm patients followed by a primary care physician and homecare providers were studied. Patients' characteristics were assessed (frailty, using the SEGA-tool (200), holistic assessment, using the RAI-for home care (201)). However, long-term systematic use of a formalized instrument turned out to be irrelevant: either because it was too short (SEGA), or because of copyright issues (RAI).

Assessment of the 65 UATm patients showed that about 40% of them had complex needs, among others: discrepancies between actors in care objectives, priorities and life projects, exhaustion of primary and/or secondary networks, absence of formal or informal caregivers, precarious social context, multimorbidity and multiple uncoordinated actors. On this basis, the operational definition of "patients with complex needs" was used for any interacting elements of patient and healthcare, which could benefit from interprofessional and interinstitutional processes.

2. Interprofessional and interinstitutional processes

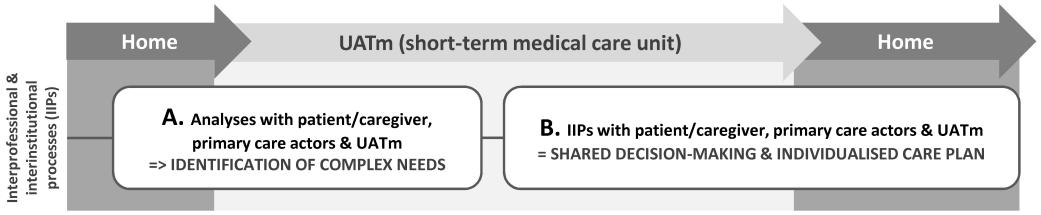
For patients with complex needs, various IIPs were tested in close collaboration with physicians and homecare teams. During this pilot intervention, micro-, meso- and macroscopic obstacles and facilitators to the implementation of IIPs were discussed with stakeholders and, where appropriate, with hierarchies and relevant actors (e.g. patients, informal caregivers). Finally, two types of IIPs seemed to be acceptable and feasible by stakeholders. Those IIPS shared the same outcome (i.e. identification of at least a shared goal) and similar characteristics of involvement of interprofessional and interinstitutional actors, including the patient (Table 7).

Table 7. Description of interprofessional & interinstitutional transitional processes (IIPs)

	Bilateral/multilateral coordination processes during UATm-stay (=IIPs-multilateral)	**Interprofessional & interinstitutional coordination meeting (=IIPs-meeting)**
Actors	**Non-professionals :** at least patient and/or legal 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 organisations	
Shared decision-making processes	**Asynchronous**: iterative multilateral contacts can occur « live » (i.e. physically, phone or other supports), or via email and other asynchronous supports (i.e. fax)	**Simultaneous**: at least three actors are actually meeting
Outcomes	At least one shared goal identified out of SDM processes	
Indicators	Multilateral coordination processes occurred during UATm stay: yes/no ▪ Actors involved ▪ Outcome present: yes/no	Coordination meeting at UATm or at home took place : yes/no, date ▪ Actors involved ▪ Outcome present: yes/no

Figure. 5 models the succession of the clinical activities developed by the intervention: (A) the formal evaluation of all patients' complexity of needs by the UATm nurse coordinator; and (B) the facilitation of interprofessional and interinstitutional transitional processes (IIPs) by a UATm nurse coordinator, primarily for patients with complex needs. Because of previous similar experiences in the field of IIPs (72), we hypothesized that IIPs would be more acceptable and more feasible for patients with complex needs. This is why we privileged efforts towards IIPs for such patients. However, we did not exclude IIPs for other UATm patients.

Figure. 5. Generic model of the UATm new clinical activities



Concomitantly to transitional IIPs for specific patients, other forms of interprofessional and interinstitutional processes were promoted to support innovation diffusion. First, SSF and LB served as the facilitators of mutual acquaintanceship, introducing UATm and imad nurses, presenting the intervention to imad teams whenever one of their patients was at the UATm and identified as complex. Second, the UATm nurse systematically reported what was called "unsatisfactory IIPs", meaning IIPs ranging from conflictual relationships to perceived lack of interest. In such situations, SSF and LB worked out the best approach to identify obstacles and solve the issue through various paths (e.g. interpersonal, hierarchical). This could occur with any kind of professional, from any institution involved in the patients' care. We also collected data from success stories to be used in presentations (e.g. satisfied patient, satisfied professionals, reduced hospitalisations), and we formally interviewed several homecare nurses, physicians and patients to help us better understand obstacles and facilitators of IIPs.

3. Formalized care plan & information system

Shared goal(s) identified through the IIPs were formalised in the "UATm letter". It aimed to inform out-patient care providers about the UATm stay, thus supporting the patient's care continuity. This document replaced both usual medical discharge and nursing discharge letters. This merging also aimed to avoid information duplication and discrepancies. This letter was elaborated through interprofessional and interinstitutional processes to improve acceptability and feasibility. Moreover, because of responsibility issues, it was formally validated by the Geneva Cantonal Department of Health.

The UATm letter includes medical (diagnosis, medicines, events), nursing (assessment), and interprofessional elements (goals, actions, tasks, IIPs, patient networks). It is signed by both the UATm geriatrician and nurse (Appendix II). All patients leave the UATm with this document, which is also transmitted to their care providers.

This paper / pdf formalized care plan's structure is similar to the interoperable shared care plan that has been developed within the electronic patient record (178) by PRISM, imad, and the Geneva Cantonal Health Department (195). This paper/pdf version was meant to be replaced by its electronic version, thus enabling direct transfer of the shared care plan into the primary care

providers' patient record. Due to technical and governance issues, this step was postponed. However, UATm patients were still offered to enrol to the cantonal electronic patient record: this procedure facilitated access to various health documents (e.g. hospital reports, homecare documents, laboratory results).

5. Financial resources

Because of the characteristics of the Swiss health care financing system, primary care physicians' (PCP) and homecare stakeholders' participation to IIPs during a UATm stay was an issue. First, because the UATm had to pay PCP's services out of its daily flat rate (1-hour meeting with physician equals approximatively 1-daily flat rate). Second, because homecare stakeholders' participation to IIPs had no financing. However, thanks to a federal report analysing the laws (202), it became clear that both PCP and homecare had actually adapted financing regimes for IIPs during an in-patient stay. The intervention team worked with *Cité générations* financial department to adapt relevant billing procedures.

During the intervention, part of the UATm nurse was paid by PRISM. However, in order to anticipate the durability of this position, we analysed and quantified the nurse's work load. For this purpose, using a model of nursing activities(203), we elaborated a grid to collect quantitative and qualitative data on the effective nurse's workload. Through several random days of shadowing, we could show that coordination activities with other professionals amounted to approx. 35% of the nurse's time, while information management (reading, analysing, formalizing) took 21% of his time. These elements are being used to adjust the financing model of the UATm.

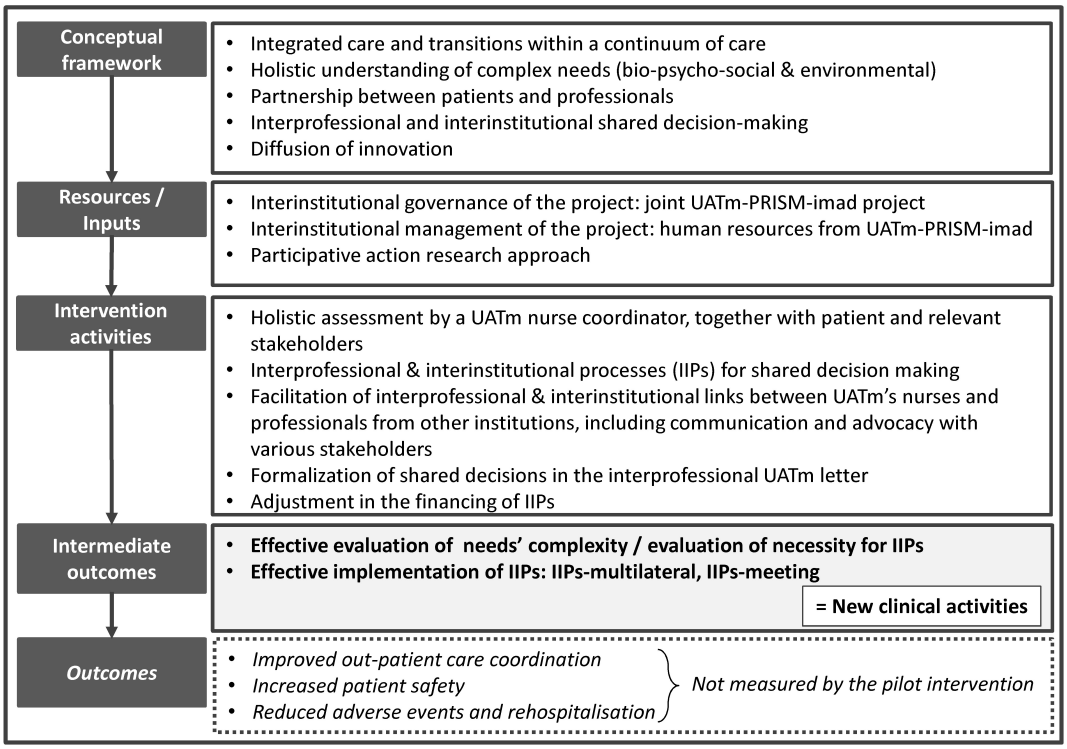
6. UATm nurse coordinator

When the intervention started, the UATm nurse's job description mainly focused i) on nursing activities under medical delegation, which could not be performed by nurse assistants (e.g. intravenous injections), and ii) on project management and/or data collection. Building upon the nurse's competences targeted in the Swiss Bachelor of nursing (165), several activities were tested and added to this job description. They included the holistic assessment of the needs (including the identification of elements of complexity and the priorities of the patients), the coordination of and collaboration with the network's stakeholders (including interprofessional and interinstitutional processes), and the formalization of a shared care plan (204).

In another in-patient setting (*Geneva University Hospital*s(189)), similar tasks were specified in the job descriptions of at least three different functions : the in-patient ward nurse (205), the liaison nurse (206) and the social worker (207). While this fact has been discussed (208), the UATm intervention clearly decided to favour direct collaboration between the UATm nurse and the out-patient actors.

The main elements of the UATm pilot intervention are summarized in the following logic model (Figure. 6).

Figure. 6. Logic model of the UATm pilot intervention



Evaluation of the intervention

Within the action research method used for this pilot intervention, various iterative data collections, analyses and adjustments occurred between 2016 and 2017 (187). Then, stakeholders decided to evaluate the intervention, also catching the opportunity of SSF's thesis to increase synergies between field and academic expertises.

1.5 Thesis' aim, objectives, and overall design

The present thesis started in 2015 in order to increase knowledge in the field of integrated care (IC) in Switzerland, more specifically in the areas of interprofessionality and interinstitutionality. To take into account and further investigate systemic and contextual specificities of IC, two levels of the Swiss health system were targeted: the country level and the local intervention level. To further explore IC implementation and evaluation, both quantitative and qualitative methods were used. For this purpose, four studies were planned.

National level: Swiss survey of integrated care

- **The first study sought to identify care integration initiatives in Switzerland and to specify their characteristics.**

  To this end, between 2015 and 2016, we conducted a nation wide cross-sectional study and collected self-reported data through an online survey.
- **The second study explored the influence of the organisation and funding of care on the implementation of interprofessional collaboration.**

  To this end, we conducted moderated mediation analyses based on the self-reported data collected in the previous cross-sectional study.

Local level: evaluation of the UATm pilot intervention

The last two studies evaluated an integrated care initiative conducted in the Canton of Geneva. This initiative aimed to formalise the implementation of interprofessional and interinstitutional processes (IIPs) between an in-patient structure (UATm of *Cité générations*) and out-patient structures.

- **First, we investigated the feasibility of these IIPs.**

  To this end, between 2017 and 2019, we conducted a feasibility study, using data from the UATm's patients' records.
- **Second, we explored for which patients, with whom, in what context and how these IIPs had been implemented.**

  To this end, between 2018 à 2019, we conducted a realistic evaluation, collecting data through individual interviews with patients and professionals.

1.6 Ethical considerations

Studies 1 and 2 did not require submission to an ethic committee. We mainly presented pooled analyses. When presenting specific initiatives of care integration, we individually asked respondents for permission. Except for one, whose name was excluded from the publications, all respondents agreed to be visible as care integration initiatives.

Studies 3 and 4 were approved by the Geneva Cantonal Ethics Committee for Research (Req-2018-00801).

1.7 Funding

Studies 1 & 2: The Swiss survey on integrated care received contributions from the Swiss health observatory, the Forum Managed Care, and the Centre for Primary Care and Public Health (Unisanté), University of Lausanne.

Studies 3 & 4: *Cité générations* (Arsanté) contributed financially to these studies by allocating project time to its employees (SM and GM, nurse coordinators). PRISM contributed through SSF's salary for project management and for research time, and co-financed with Arsanté part of the nurse coordinators' salary. Imad contributed by allocating project time to its employee (LB).

1.8 Declaration of interest statement

The authors declare that no conflict of interests exists.

1.9 Dissemination of results

While the Chapters 2 and 3 had been published in scientific journals when this thesis was completed, Chapter 4 had been submitted for review in March 2020, and Chapter 5 will serve as the basis for an additional submission.

Additionally, results from this thesis were disseminated in various other forms:

- Results from the first study (Chapter 2) were widely disseminated: in various scientific events and publications, in numerous field and educational contexts, and in various languages (Appendix I). All the persons who had been contacted in the survey (either as experts, or as respondents of an initiative) were personally provided with hyperlink access to both the Obsan report ((209), in French) and the Health Policy paper ((210) in English). Some of the raw data are available online (209), and upon request.
- Study 2 (Chapter 3) had just been published in a scientific review at the time of completion of this thesis. We also intend to inform the persons who had been contacted in the survey.
- Results of study 3 (Chapter 4) had been discussed with stakeholders and submitted in March 2020 for scientific review. At thesis completion, results of study 4 had only been discussed with stakeholders and will be submitted to a scientific journal in the aftermath of this thesis process, they are presented in Chapter 5.

Because of the collaborative approach used in the implementation of the evaluated initiative (Studies 3 and 4), we will share targeted results with stakeholders, respondents and other professionals involved. After completion of this thesis, oral presentations and workshops will be co-

constructed with PRISM, *Cité générations*, and imad. Moreover, because of the various professional engagements of the author of this thesis, its results will naturally flow into her activities.

1.10 Structure of this manuscript

The four studies (cf. section 1.5) are presented as separate chapters of this manuscript. Chapters 2 and 3 provide the readers with a broader understanding of integrated care (IC) in Switzerland in 2016, and of various impacts of contextual elements on IC implementation (e.g. linguistic, cultural, financial). Chapters 4 and 5 provide a deeper insight into contextualised IC implementation, by using both quantitative and qualitative methods to evaluate a local IC initiative targeting interprofessional and interinstitutional shared decision making processes. Finally, Chapter 6 wraps these elements up in a general conclusion, which provides the readers with further thoughts and recommendations.

2. Integrated care in Switzerland: results from the first nationwide survey

Schusselé Filliettaz[1,2], Séverine, Peter Berchtold[2], Dimitri Kohler[3], and Isabelle Peytremann-Bridevaux[1]. 'Integrated care in Switzerland: results from the first nationwide survey'. *Health Policy* 122, no. 6 (2018): 568–76. https://doi.org/10.1016/j.healthpol.2018.03.006.

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Abstract

Introduction: Due to fragmentation of care delivery, health systems are under pressure and integrated care is advocated for. Compared to the numerous existing integrated care initiatives in Europe and elsewhere, Switzerland seems to lag behind.

Methods: The objective of the survey was to produce a comprehensive overview of integrated care initiatives in Switzerland. To be included, initiatives needed to meet four criteria: present some type of formalization, consider >2 different groups of healthcare professionals, integrate >2 healthcare levels, be ongoing. We systematically contacted major health system organisations at federal, cantonal and local level. Between 2015 and 2016, we identified 172 integrated care initiatives and sent them a questionnaire. We performed descriptive analyses.

Results: Integrated care initiatives in Switzerland are frequent and increasing. The implementation of initiatives over time, their distribution between linguistic areas, the number of healthcare levels integrated, and the number of professionals involved vary according to the type of initiatives.

Discussion: Despite Switzerland's federalist structure and organisation of healthcare, and only recent incentives to develop integrated care, initiatives are frequent and diverse. Stakeholders should sup-port existing initiatives and facilitate their development. They should also promote innovative avenues, experiment alternative payment models for integrated care, foster people-centeredness and incentivize interprofessional models. This will require systems thinking and contributions from all actors of the healthcare system.

2.1 Introduction

Socio-economic and technological advances contribute to increased life-expectancy and population ageing, which impacts on chronic conditions' prevalence and puts health systems under pressure worldwide (1,2). Numerous challenges have been identified such as misfits between systems designed to deal with acute health problems and increased needs for chronic diseases management, resource's shortages (financial, human), interinstitutional and interprofessional fragmentation, lack of care coordination as well as primary care weaknesses (1,3–5). To overcome these challenges and to be able to care for an increasing number of people with one (or several) chronic condition(s) and/or complex psycho-social issues, health systems must adapt. They need to master such challenges and improve quality, access, efficiency and equity of care. In that context, a variety of models have been developed (6,7), supporting a shift towards more integrated care (8).

No definite consensus of integrated care has been reached until now, albeit coexistence of numerous definitions (8). Two of them can be used concomitantly (5), for example:

> *"Integrated health services encompasses the management and delivery of quality and safe health services so that people receive a continuum of health promotion, disease prevention, diagnosis, treatment, disease-management, rehabilitation and palliative care services, through the different levels and sites of care within the health system, and according to their needs throughout the life course." (18)*

> *"[…] integration is a coherent set of methods and models on the funding, administrative, organisational, service delivery and clinical levels designed to create connectivity, alignment and collaboration within and between the cure and care sectors. The goal of these methods and models is to enhance quality of care and quality of life, consumer satisfaction and system efficiency for patients with complex, long term problems cutting across multiple services, providers and settings. The result of such multi-pronged efforts to promote integration for the benefit of these special patient groups is called 'integrated care." (19)*

Within this conceptual diversity, it is difficult to elaborate a stable and replicable typology of integrated care initiatives (11,211): heterogeneous definitions are used to identify, develop and evaluate integrated care programs indeed (3,20,93,94,97,153,154,212–216). It is also difficult to generalize results and to prioritize implementation efforts (19,217). Nevertheless, benefits of integrated care are considered to encompass numerous aspects (5,218–223) such as improved quality of healthcare, as well as positive impact on outcomes and efficiency (224,225). Research has shown that elements from the health system or health policy levels influence the implementation and success of integrated care activities. In short, policy is necessary but not sufficient (226), strengthening health workforce is imperative (227), interacting barriers and facilitators to implementation exist (153,228–231) and finally, individual leadership (232,233) as well as attitude towards change and innovation (234) play important roles.

The Swiss health system ranks very well internationally regarding quality of care, access, efficiency, equity and healthy lives (235). Patients are offered a large choice of services and access to all

healthcare levels is unrestricted, unless specifically chosen (2). Federal policies and programs address contemporary health issues: i) a global health policy strategy (236) and related strategies targeting non-communicable diseases, mental health and end-of-life care among others (237–240), ii) programs addressing professional roles and interprofessional/interinstitutional collaboration (241–244), and iii) programs to support family medicine (245). However, healthcare stakeholders face numerous challenges calling for innovation: sub-optimal quality of care, increasing healthcare needs and expectations, high costs, reduced financial and workforce resources (1,2,149,246–250). In spite of these challenges, the development and the implementation of integrated care models is considered to be limited in Switzerland. In fact, innovation seems to be restricted to health maintenance organisations and GP's networks implemented since the 1990's (246) and to chronic disease programs (145). This contrasts with the numerous initiatives identified in Europe and elsewhere (3,93,97,152–156,215,228,251,252).

Several characteristics of the Swiss health system can explain this situation (157). Firstly, a tendency to fragmentation: i) a federalist organisation of the health system with divided responsibilities between the federal, cantonal and local levels (i.e. Switzerland is often considered to have 26 slightly different healthcare systems, one for each of the 26 cantons); ii) a country divided into two main cultural areas (German-speaking, French/Italian speaking), iii) a mandatory health insurance scheme operationalized by more than 20 insurance companies, iv) complex financing mechanisms including numerous private and public sources, as well as high out-of-pocket contributions from patients, v) fee-for-service payment system, vi) financial and societal valorisation of hyper-specialization, vii) absence of interoperable IT communication tools. Secondly, Switzerland has no federal regulatory framework for integrated care.

Despite the above mentioned issues, some cantons consider integrated care policies (159), develop specific integrated care masterplans (160), or promote the implementation of new financing measures (161). Interprofessionality is supported at several levels in Switzerland: in the new federal law on health professionals (162), in a recent federal program (241) and at various level in the educational system (163,165,253). Calls for proposals have been issued to research healthcare services (254) as well as innovative interdisciplinary and integrated care models (255). Experts recommend innovative models in primary care (256). Finally, the Swiss population increasingly adopts managed care insurance schemes (166).

In this context, we conducted the first Swiss Survey on Integrated Care (SSIC). It aimed at providing a comprehensive picture of integrated care in Switzerland to i) map existing initiatives and describe their components with special emphasis on the different linguistic areas of Switzerland, and ii)

provide healthcare stakeholders with elements for further research, implementation and policy developments.

2.2 Material and methods

Study design and period

We conducted an online survey between July 2015 and July 2016.

Identification of integrated care initiatives and eligibility criteria

We followed a systematic and comprehensive search process to identify Swiss integrated care initiatives: we contacted major organisations of the Swiss health system (providers, regulators, financers, members of educational and research structures, as well as professional and community organisations) at the federal, cantonal and local levels. We also contacted integrated care experts and used the "snow-ball effect" (257) to increase our reach.

In the absence of a consensus on a definition for integrated care, we refrained from using an ex-ante definition to identify integrated care initiatives. Instead, we established a set of operational inclusion and exclusion criteria to methodically select initiatives that we would consider to be integrated care. This was done on the basis of descriptions of existing European or country/regional level projects (18–20,217,258) and expert opinions.

Inclusion criteria

Any initiative (i.e. any program, project, model, network, organisation) fulfilling the following four criteria was considered an "integrated care initiative":

1. "Formalization" of integrated care principles (such as an agreement between several organisations, a public mandate, a research protocol, a report);
2. Integration of at least two levels of healthcare services (such as physician-led primary care, non-physician-led primary care, specialized medical outpatient services, specialized non-physician-led outpatient services, home care services, community services, public health departments);
3. Integration of at least two different groups of healthcare professionals (such as primary care physicians / specialized physicians, nurses (general, specialized or advanced), dieticians, occupational therapists, pharmacists, physiotherapists, social workers, volunteers, informal carers);
4. Ongoing at the time of the survey (i.e. at least during some period between July 2015 and July 2016).

Exclusion criteria

Initiatives with any of the following characteristics were not considered to be eligible for the SSIC:

- Inclusion of children or hospitalized patients only, and/or exclusive focus on acute conditions/episodes;
- Implementation exclusively in hospital settings (in- and/or outpatient) without external formal link;
- Physicians networks using clinical guidelines and/or quality circles only, without additional integrated care elements;
- Provision of "usual care" (such as multidisciplinary diabetic teams, tumor boards, pain, memory or wound centers);
- Palliative care (mobile and/or inpatient and/or outpatient) (146,238) ;
- Limited to administrative aspects or to education;
- Extremely specialized services/practices (such as initiatives for patients with ventricular assistance devices);
- Care management models of health insurance plans, only formalized between patients and health insurance plans, without formal inclusion of external healthcare professionals.

Online questionnaire

The online self-reported questionnaire was developed on the basis of similar research conducted by the authors in Switzerland (145) as well as by others in Europe (3). It comprised 24 questions targeting the following aspects: canton(s) of activity, start of the initiative, content (such as target population(s), services provided, healthcare delivery levels targeted, professional groups involved), financing sources, barriers to patient-cantered care and to interprofessional collaboration, and evaluation. Ten healthcare stakeholders involved in integrated care in Switzerland tested the French and German versions of the questionnaire and gave feedback on its content and acceptability; the questionnaire could then be finalized.

Data collection

Organisations and/or individuals first received a personalized email either in German, French or English describing the aims of the survey and requesting permission for a phone interview in any of the above mentioned languages. If accepted, one of the three main authors (SSF, IPB, PB).carried out the interviews. During these interviews, characteristics of potential initiatives were collected to assess eligibility. Representatives of the eligible integrated care initiatives then had one month to complete the questionnaire; non respondents received two successive one month-interval reminders (email or phone).

Data analyses

Descriptive statistical analyses were performed to describe the identified initiatives: first at a global level, then stratified by linguistic areas (German versus French/Italian) and by category of initiatives. The latter were created a posteriori on the basis of the global results and on the authors' expertise in the field (Table 8).

Table 8. Categorization of included initiatives (n=155, 100%)*

Categories	**Description & elements used for the categorization of the included initiatives**
"Health centers" (n=20, 16%)	Initiatives including several structures and levels of healthcare under the same governance, such as: primary healthcare (physician or other), specialized outpatient care (physician or other), inpatient acute care, transition care and/or long-term care, etc. This category does not include psychiatry or mental health initiatives (see below).
"Physicians networks" (n=9, 6%)	Networks of general practitioners and/or family doctors and/or medical specialists, who develop/use guidelines, and organise quality circles.
"Specific target groups" (n=52, 34%)	Initiatives targeting ≥1 somatic condition or specific patient group. This category does not include psychiatry or mental health initiatives (see below).
"Mental health & psychiatry" (n=41, 26%)	Initiatives targeting psychiatry (as a whole or a specific pathology) and/or mental health.
"Medicines" (n=8, 5%)	Initiatives targeting treatment/drug management.
"Transition & coordination" (n=25, 16%)	Initiatives focusing on transition/coordination activities between several organisations/levels of healthcare (case/care management, interprofessional and interinstitutional care teams, etc.)

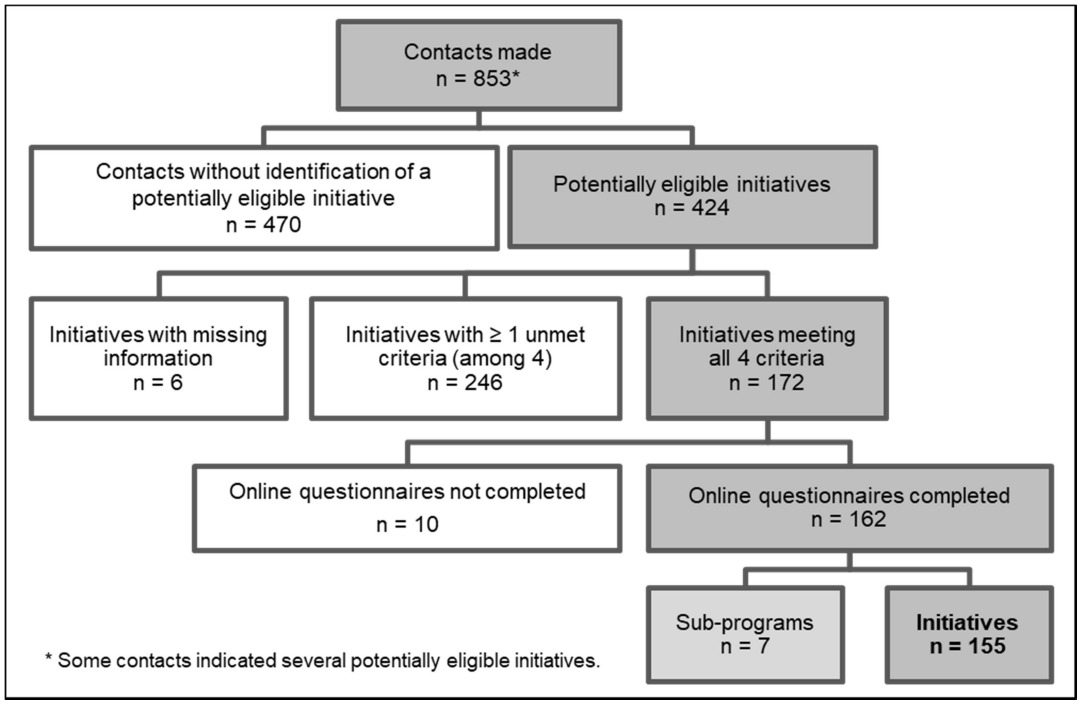
* Suggested categories are mutually exclusive and reflect all included initiatives

2.3 Results

Data gathering processes

We made a total of 853 initial email contacts, which led to the final identification of 172 initiatives (Figure. 7). Ninety-four percent of the representatives completed the online questionnaire, leaving data for 162 integrated care initiatives, seven of which represented sub-programs of a larger initiative already included. Analyses were performed on the data provided by 155 initiatives.

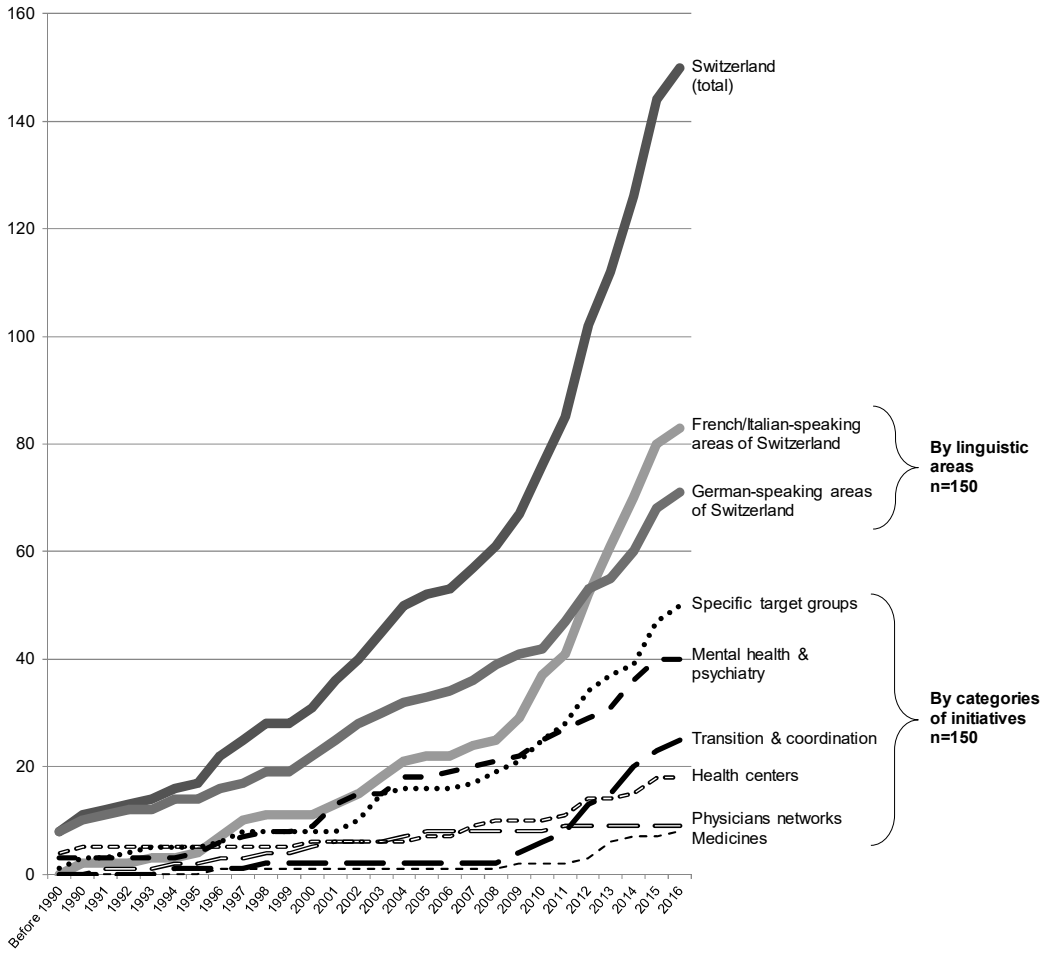
Figure. 7. Swiss survey on integrated care 2015-2016: flow diagram



Trends in the implementation of integrated care initiatives

In the last 26 years, integrated care initiatives had been steadily implemented in Switzerland, increasing from a dozen in 1990 to 155 in 2016. This increase accentuated during the last six years; more than 50% of the included initiatives started between 2010 and 2016. Analyses by linguistic areas showed that initiatives were more frequent in the German-speaking areas until 2012 only (Figure. 8).

Figure. 8. Cumulative number of initiatives: overall, by linguistic areas and by categories of initiatives (from before 1990 to 2016)



Among the 155 initiatives included, 52% were implemented in the French/Italian-speaking areas and 45% in the German-speaking areas; 3% were implemented across both linguistic areas. Table 8 shows that these 155 initiatives were distributed as follows: 34% in the "Specific target groups" category, 26% as "Mental health & psychiatry" initiatives, 16% as "Health centres", 16% in the "Transition & coordination" category, 6% as "Physician networks", and 5% as "Medicines" initiatives. Analyses both by linguistic areas and by categories revealed that "Health centers" and "Physicians networks" initiatives were more present in the German area, while "Specific target groups", "Transition & coordination" and "Medicines" prevailed in the French/Italian area. Initiatives in "Mental health & psychiatry" were evenly distributed.

Categorization revealed heterogeneous increase in the implementation (Figure. 8). "Health centers" initiatives were the most frequent in 1990 (n=5) and went through an almost 4-fold increase until 2016 (n=18). In comparison, the first "Transition & coordination" included initiative was launched in 1994 and 25 were found in 2016 (25-fold increase). There were three "Specific

target groups" and three "Mental health & psychiatry" initiatives in 1990; 26 years later, the latter showed a > 10-fold increase.

Healthcare delivery levels integrated by the initiatives

Respondents were asked to indicate which pairs of healthcare delivery levels they targeted for integration (12 different levels, i.e. 66 different pairs). Median number of integrated healthcare delivery pairs was 9 (range 1-66). Results by category showed that "Health centers" initiatives intended to improve integration between the highest number of different pairs (median: 20), followed by "Physicians networks" (median: 10), "Mental health & psychiatry" (median: 10), "Transition & coordination" (median: 8), "Specific target groups" (median: 7) and "Medicines" (median: 5) initiatives. Initiatives most often intended to improve integration between the "Physician-led primary care" level and the "Physician-led specialized outpatient care" level (39% of the cases). Second came integration between the "Relatives/informal carers" level and the "Non-physician-led specialized outpatient care" level (36%).

Patterns of healthcare delivery levels targeted by initiatives were heterogeneous. For example, "Physicians networks" mostly intended to improve integration between "Physician-led primary care" and the other levels, while "Health centers" initiatives' results showed that integration was much broader and included more levels.

Healthcare professionals involved in the initiatives

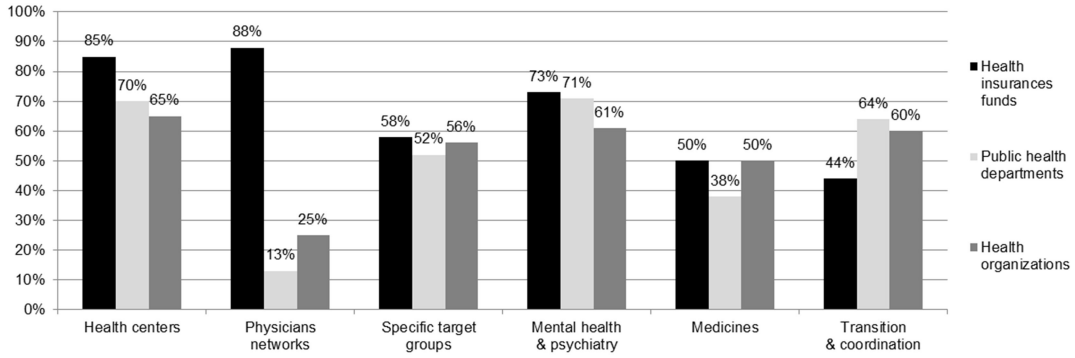
A median of four out of 13 possible groups of healthcare professionals were involved in the initiatives (range 2-12). Grouped results grouped results revealed that physicians (91% of the initiatives) and nurses (87% of the initiatives) were the most frequent professional groups involved.

Categorization revealed that the highest number of professional groups were involved in "Health centers" initiatives (median: 8), followed by "Specific target groups" (median: 5), "Transition & coordination" (median: 4), "Physicians networks" (median: 4), "Mental health & psychiatry" (median: 3) and "Medicines" initiatives (median: 3).

Financing of integrated care initiatives

Among nine possible financing sources, respondents reported a median of three sources (range 2-4), the three most prevalent of which were health insurance funds (65%), public health departments (59%), and healthcare organisations (57%). Categorization results (Figure. 9) show similar patterns except for "Physicians networks" initiatives, which were funded almost exclusively by health insurance companies, and for "Transition & coordination" initiatives, which reported a higher proportion of public (64%) and organisational funding (60%).

Figure. 9. Frequency of the three main sources of financing, % of initiatives by categories (n= 150)



Patient-centered care measures and support to professionals

Initiatives implemented measures to increase patient involvement in care: while 77% of initiatives gave information material to patients, around 70% promoted the active involvement of patients in decision making and care planning. Initiatives also included specific elements designed to support healthcare professionals. Three out of four initiatives organised regular meetings between health professionals, and almost the same number offered multi/interprofessional training.

Barriers to patient-centered care and to interprofessional collaboration

More than 60% of the respondents considered inadequate funding and insufficient time to be obstacles to patient involvement. Also, 45% of respondents thought that interprofessional collaboration was hampered by difficulties in information sharing, as well as by different work procedures between organisations.

Evaluation of initiatives

The majority of respondents (70%) reported that their initiative had been evaluated or was going to be evaluated. These evaluations focused mainly on patients and caregivers' satisfaction as well as care processes (55% and 50% of the initiatives, respectively).

2.4 Discussion

Main results

The first Swiss Survey on Integrated Care (SSIC), conducted between 2015 and 2016, included 155 integrated care initiatives throughout the country. Analyses revealed heterogeneity in the chronological implementation of initiatives, in the number of healthcare professionals involved, in the healthcare delivery levels integrated and in the sources of financing. Sub-groups analyses by type of initiatives shed an interesting light on the diversity of integrated care in Switzerland. First, some types of initiatives were more prevalent than others: initiatives for the "Specific target groups" and "Mental health & psychiatry" categories represented 60% of all identified initiatives.

Second, the types of initiatives across the two main linguistic areas differed: “Health centers” and “Physicians networks” initiatives were more frequent in the German-speaking part of Switzerland, while “Specific target groups”, “Mental health & psychiatry” and “Transition & coordination” initiatives prevailed in the French/Italian-speaking part of the country. Lastly, trends in implementation were on the rise and changed over time: “Physicians networks” initiatives experienced a slow but steady increase since the 1990’s, while “Transition & coordination” and “Medicines” initiatives were almost inexistent until 2008, when their number sharply rose.

Revealing this Swiss upward trend in integrated care is promising and reassuring, especially because the Swiss health system presents several characteristics usually considered to be hindering care integration. Facilitators of innovation are probably multifactorial in Switzerland: rising needs for care integration linked to the increasing burden of chronic diseases, multimorbidity and complex needs, rising social and professional acknowledgement of fragmentation, empowerment and leadership of individual healthcare actors towards innovation, better knowledge and abilities in the field of integrated care implementation, room of manoeuvre offered by a federalist system, among others.

Strengths and limitations of the survey

The main strength of this project was the systematic and comprehensive search of initiatives across a whole country, approaching all major healthcare stakeholders in Switzerland. The 94% response rate reinforced the results.

While interpreting results, the following three main limitations need to be considered. Firstly, the absence of a consensual definition for integrated care led us to set up an operational set of criteria for integrated care. While it did help us circumscribe the scope (internally and when exchanging with respondents) of what we would consider to be integrated care, and while it did help us capture a wide spectrum of integrated care initiatives, this set of criteria may not be comprehensive enough. This means that initiatives not meeting the eligibility criteria were excluded from the survey: for example, initiatives targeting care integration within the same organisations, or initiatives considered to be “usual care”, or initiatives in the field of palliative care, which had already been thoroughly identified (146,238). Based on our deep knowledge of the Swiss situation, we are nevertheless confident that this set of criteria allowed us to capture the vast majority of initiatives existing in Switzerland. Secondly, the fact that the data gathering processes entirely relied on information reported by the contact persons. Therefore, we cannot exclude that eligible initiatives might have been missed. We cannot exclude either that the reported information might not be fully accurate, thus limiting the quality and conformity of the collected data. Finally,

we defined the six categories a posteriori: the criteria used for this exploratory categorization and the subsequent analyses may be discussed.

Parallels between SSIC and other surveys

Direct comparison of the SSIC results with those of similar research conducted in Switzerland and elsewhere is difficult because authors used different definitions of integrated care and data collection processes. Nevertheless, parallels can be drawn which seem to match trends identified in our survey.

In Switzerland, two previous surveys support the upward trends in integrated care initiatives revealed in the SSIC. Firstly, in 2010, a survey focusing on physicians networks (246) showed that they predominated in the German-speaking part of Switzerland. Six years later, the physicians' networks fulfilling the criteria of the SSIC were found in the German-speaking areas exclusively. This may be due to cultural differences or diverse prioritization and organisation of healthcare at the cantonal level. Secondly, in 2013, a survey focusing on chronic conditions programs detected 44 of them (145). In 2016, the SSIC identified 76 integrated care initiatives targeting at least two chronic conditions.

At the European level, several projects targeting various aspects of integrated care produced findings similar to ours: "Developing and validating disease management evaluation methods for European healthcare systems" (DISMEVAL) (214) and "Innovating care for people with multiple chronic conditions in Europe" (ICARE4EU) (154). DISMEVAL revealed that the majority of the initiatives identified focused on defined conditions. On the second hand, its results showed the emerging implementation of models focusing on elements of coordination. DISMEVAL also highlighted that funding came from numerous sources (153). ICARE4EU published results from 101 programs targeting multimorbid patients across 25 countries, including Switzerland (3).

More recently, further European projects were launched: "Benchmarking integrated care for better management of chronic and age-related conditions in Europe" (Project INTEGRATE) (93), "Scaling integrated care in context" (SCIROCCO) (94) and "Sustainable integrated care models for multi-morbidity delivery, financing and performance" (Selfie2020) (97). INTEGRATE is building up on 50 evidence-based policies (212). SCIROCCO is learning from 34 good practices to catch systemic facilitators for integrated care. SELFIE elaborates on 17 projects to propose appropriate financing/payment schemes that support the implementation of these models (215). Their preliminary results are congruent with the heterogeneity of integrated care showed in the SSIC and the need to support it with targeted facilitators, among them a probable blend of financing patterns.

Finally, Belgium launched INTEGREO (96,252) in 2015 to develop integrated care at the country level, with around 20 pilot-projects starting to include patients in fall 2017. Results from this project will help understand the impact of contextual elements on integrated care development, and clarify issues regarding transferability of initiatives (124,259). Since the Belgian federal organisation presents similarities to Switzerland's, their results may help Swiss stakeholders to further consider, develop, implement and evaluate integrated care on a larger scale.

Suggestions for stakeholders

Results from the SSIC can suggest directions for Switzerland or for countries with similar decentralized health systems.

Should the heterogeneity of integrated care initiatives revealed in our survey be considered to be positive?

Shaw et al. stated that "one form of integrated care does not fit all (98)". If the heterogeneity showed in the SSIC reflects the adaptation of initiatives to specific settings, users' needs and stakeholders involved, then this diversity must be considered to be positive and be supported. Swiss stakeholders should adopt "systems thinking (14)" to integrated care and develop policies for all three levels of the health system: the macro (system) level, the meso (organisational) level and the micro (clinical) level (260). In a federal system, this might require a framework with a shared vision and clear distribution of roles explicitly in favour of care integration. This framework should foster facilitators and remove obstacles. However, concomitantly, local innovations should be supported and leadership encouraged (14).

Which financing schemes are suitable to integrated care?

Kodner & Spreeuwenberg (19) reported that care integration is "designed to create connectivity, alignment and collaboration within and between the cure and care sectors". Although the fee-for-services schemes used in Switzerland include some compensation for coordination activities, these schemes do not support care integration: this is highlighted by our results showing the multiple financing sources as well as the barriers reported by the respondents. Swiss authorities acknowledge that healthcare innovations must be encouraged, supported and durably paid for, and that new financing schemes have to be developed (237). Indeed, for further integrated care developments, there is a crucial need for alternative payment models such as pay-for-coordination/-performance, bundled payment, capitation or populational-based global payment (261–263). Within the Swiss context, such new models should first be experimented, and then implemented consensually with all stakeholders, among them federal and cantonal authorities, health insurance companies, integrated care providers and patients' organisations.

How to focus integrated care on people?

Among authors highlighting the patients' call for integrated care (8,258,264), Walker et al. wrote that "patients may not understand the term integrated care but are relatively clear on what the concept of integrated care entails and support its successful implementation" (265). More specifically, Borgermans et al. stated that "excellent care is essentially integrated, people-centred and values a bio-psycho-social approach to care […] (212)". In the SSIC, whereas the majority of initiatives focused on a specific disease, it remains unclear how these initiatives managed to combine a disease-centred perspective with this recommended wider bio-psycho-social approach. Additionally, only around 70% of the initiatives implemented measures to actively involve patients in their care plans and decisions. We hope that programs such as the Swiss National Science Foundation research program on health systems (266) will further identify barriers and difficulties hindering people-centred approaches (72,157). Further surveying patients' satisfaction and experiences (267) will also help. User's perspectives should be systematically integrated to quality improvement approaches at all levels of the healthcare system, indeed (see examples in the UK, USA and Germany (268,269)).

Where are the interprofessional teams?

Among other authors, Suter et al. claimed involvement of "interprofessional teams (12)" to be a key element of integrated care. Electronic patient records will probably facilitate communication, but "aspects of personal relationships between clients and professionals/among professionals are central" (215). Even if elements of the Swiss context do promote interprofessionality (see Introduction), the SSIC results showed that teamwork and implementation of interprofessional teams in practice could still be improved at the micro level, especially when professionals belong to various organisations. Academic research (for examples (270,271)) will contribute to increase knowledge on this topic. However, field implementation, not only through education (272), is needed: interprofessional collaboration should be facilitated, mostly through organisational and systemic change management (13,72,187), with support of institutional and political stakeholders.

2.5 Conclusion

Up to now and in the absence of comprehensive data on integrated care in Switzerland, the Swiss health system seemed to lag behind other countries. This first Swiss Survey on Integrated Care revealed an important and increasing number of initiatives. It also showed the heterogeneity of existing initiatives. While supporting existing initiatives and facilitating their development at the national and cantonal levels, policy makers and healthcare stakeholders should take the existing diversity into account. In addition, policy makers and healthcare stakeholders should further provide incentive for care integration and remove obstacles to their implementation and durability.

This will require systemic thinking and change management approaches from actors at the macro, meso and micro levels of the health care system. The steps recently taken in Switzerland will definitely help move into the right direction.

Supplementary material

Supplementary material linked to this chapter is available online (e.g. report with further analyses (209), questionnaires (French version), references of included initiatives): www.obsan.admin.ch/fr/publications/soins-integres-en-suisse

Authors' contributions

IPB and PB, with inputs from SSF designed the study. SSF, with help of IPB and PB, made all the contacts. Uncertainties regarding initiatives' eligibility were discussed by SSF, IPB and PB. SSF, with inputs from IPB and PB, and with support from DK, analysed the data. SSF, with precious inputs from IPB, PB and DK, prepared the manuscript.

3. Financial barriers decrease the benefits of interprofessional collaboration within integrated care programs: results of a nationwide survey

Gilles[1], Ingrid, Séverine Schusselé Filliettaz[1,2], Peter Berchtold[2], and Isabelle Peytremann-Bridevaux[1]. 'Financial barriers decrease the benefits of interprofessional collaboration within integrated care programs: results of a nationwide survey'. *International Journal of Integrated Care* 1, no. 10 (2020): 1–9. https://doi.org/10.5334/ijic.4649.

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Abstract

Introduction: Interprofessional collaboration (IPC) is a key ingredient of integrated care. Nevertheless, IPC benefits remain unclear and its implementation within integrated care initiatives is not straightforward. In this study, we first explored whether IPC was associated with organisational and patient care improvements in Swiss integrated care initiatives; we then investigated the effect of various barriers faced by these initiatives, on these associations.

Methods: Self-reported data from 153 integrated care initiatives included in the Swiss Integrated Care Survey was used. We conducted moderated mediation analyses in which patient care improvements were the outcome, the degree of IPC implementation was the predictor, organisational improvements were the mediator, and professional, patient and financial barriers to integrated care, the moderators.

Results: IPC implementation within integrated care was associated with organisational improvements, which in turn were associated with patient care improvements; this path no longer existed when financial barriers to integrated care were considered.

Conclusion: Organisational improvements should be considered a priority when implementing IPC within integrated care initiatives since patient care improvements due to IPC can be expected mainly when organisational aspects are improved. More importantly, the role of financial barriers should be acknowledged, and actions taken to reduce their impact on integrated care.

3.1 Introduction

Nowadays, chronic diseases and multimorbidity represent considerable burdens and challenges for communities, healthcare systems and individuals. For more than two decades, integrated care initiatives have been considered and implemented throughout Europe and North America as a mean to overcome those challenges (5,8,273,274). Albeit no consensual definition for integrated care exists (5), many of these initiatives share the following characteristics: patient-centred, promoting patient self-management and autonomy, and based on formal evidence of effectiveness (5). Moreover, these initiatives aim at restructuring healthcare systems, organisations and services to foster care continuity, coordination, integration, and efficiency (275). Integrated care initiatives are expected to foster collaboration between various professions (275); therefore, the involvement of interprofessional teams should represent a key element in such initiatives (12).

Interprofessional collaboration (IPC) occurs "when multiple health workers from different professional backgrounds provide comprehensive services by working with patients, their families, carers and communities to deliver the highest quality of care across settings."(276). It is considered as an interactional process between healthcare professionals, which includes communication, decision making and the emergence of shared knowledge and skills (275) to improve both patient and healthcare outcomes (80,277). Research has shown benefits of IPC for patient care (such as chronic disease care (278)), for patient safety and more globally for the provision of health services (279–281). Besides patient care improvements, IPC is also expected to induce organisational improvements by enhancing care coordination and continuity, promoting equality of status between professionals (282) increasing job satisfaction and engagement (279,283), and creating a healthy workplace (85). In turn, organisational improvements in care settings has been associated with improved patient care in terms of safety, and fewer adverse events or complications (284,285). Despite the acknowledgement that IPC is beneficial for both patients and professionals, and despite supportive policy recommendation for its implementation (162,276,286–288), IPC remains difficult to operationalize (289–291) and is poorly explored when interinstitutional aspects are at stake (32), as it is the case in integrated care.

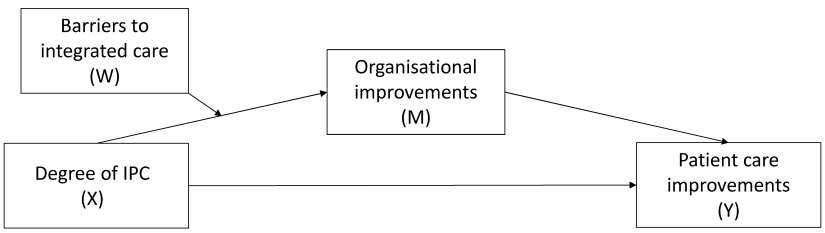
Implementing and maintaining integrated care and IPC initiatives is a complex systemic challenge (14,292) which involves overcoming barriers at three levels: professional, patient and financing (13,14). Integrated care and IPC both require changes in professional workforce practice as well as more formalized collaborations (293). More specifically, professionals need to acquire new competences, leadership and management skills, as well as capacities to deal with new roles, clinical activities, responsibilities and decision making processes, in addition to investing more time in coordination and communication (294). These adaptations and changes can lead to resistance at

the individual and organisational level (37). At the same time, integrated care requires greater engagement of patients and families in daily care as well as in decision making processes (e.g. programme planning, care options) (19). The effectiveness of integrated care initiatives is therefore based on the ability and willingness of chronic patients and family carers to be actively involved in the process. However, financial resources are considered an issue for both the implementation and maintenance of integrated care and IPC. Integrated care stakeholders fear that costs may not be appropriately distributed among structures or professionals involved and expect to face difficulties with the reimbursement of some services such as coordination activities (292,295). Integrated care initiatives involving IPC are also perceived as costly by professionals, who complain about the lack of adequate resources and remunerations (296).

These barriers can be found worldwide, including rich countries such as Switzerland. In the Swiss context, several financial barriers to the development of integrated care and IPC have been highlighted (88,157). Even if these barriers have been acknowledge and addressed recently by various initiatives at the federal, cantonal and non-governmental levels (202,241), the Swiss healthcare financing system still strongly favours fee-for-services payments, mono-institutional rates (e.g. either in-patient or out-patient professionals, not both) and unidirectional care delegation.

Despite the fact that professional, patient and financial barriers are recognized to undermine the potential positive effect of IPC on patient care within integrated care initiatives, they remain, to our knowledge, scarcely explored (32). Therefore, the present study aimed at investigating 1) the association between IPC in integrated care initiatives and patient care improvements, via organisational improvements, and 2) the way in which barriers (faced in integrated care initiatives) might condition these associations. First, we hypothesized that IPC within integrated care initiatives would be associated with perceived improvements at the organisational level and consequently at the patient care level (mediation effect, H1). We further hypothesized that this mediation effect would be moderated by professional, patient or financial barriers faced in integrated care initiatives, meaning that the association between IPC and organisational improvements would not be observed if such barriers were present (moderated mediation effect, H2; Figure. 10).

Figure. 10. Hypothesized moderated mediation model. X is the predicting variable, Y is the outcome variable, M is the mediator, W is the moderator.



3.2 Methods

Study design and data

In this cross-sectional study, we conducted secondary analyses of self-reported data from the Swiss Survey of Integrated Care (SSIC) (210). Conducted between July 2015 and July 2016, its aim was to characterize Swiss integrated care initiatives meeting four eligibility criteria: (i) formalization of integrated care principles; (ii) integration of at least two levels of healthcare services (e.g. physician-led primary care, non-physician-led primary care, specialized medical outpatient services, home care services); (iii) integration of at least two different groups of healthcare professionals (e.g. primary care physicians, specialized physicians, nurses (general, specialized or advanced), pharmacists); (iv) initiative continuation during the survey period. Representatives of the 172 eligible integrated care initiatives received an online questionnaire. Data considered for this study are described below.

Measures

The outcome variable: patient care improvements

The SSIC included various aspects of improvement in patient care: patients' involvement in patient-centred care, informal caregivers' involvement in care, recognition of informal caregivers' role, patient satisfaction, patient safety and cost effectiveness. Representatives of integrated care initiatives were asked to state if these aspects had improved in their initiative, using a 4-point Likert scale ranging from 1 = strongly disagree to 4 = strongly agree (good internal consistency for the six items; Cronbach alpha = .84). A mean score ranging from 1 to 4 was computed on these six items, with mean scores close to four indicating the observation of patient care improvements and scores close to one indicating no observation of patient care improvements.

The predicting variable: degree of interprofessional collaboration

IPC degree was assessed using 14 items. Thirteen were drawn from the ICARE4EU project (297) and one from previous Swiss research (145). IPC degree included seven items measuring the extent to which IPC was implemented in the initiative (all relevant professional groups are involved; care providers have a common -professional- language; power positions (e.g. in multi-professional teams) are balanced; attitudes towards the organisation, network, model or programme are positive; care providers confidence in each other's competencies; care providers have sufficient co-operation competencies; interpersonal relationships between care providers are good), and seven items measuring the degree of resistance to the implementation of IPC (care providers are afraid of losing their professional autonomy; different management cultures hinder collaboration; there are barriers for cooperation between medical and non-medical care; there are barriers for information exchange; different working practices of organisations hinder collaboration; over-regulation

hinders collaboration; under-regulation hinders collaboration). For each item, representatives of integrated care initiatives were asked to indicate the degree to which the statement corresponded to the reality in practice, using a 4-point Likert scale ranging from 1 = strongly disagree to 4 = strongly agree. Internal consistency for the 14 items was high (Cronbach alpha = .90) and a mean score was computed on the 14 items (scores close to four indicating a high degree of IPC observed in initiatives).

The mediator: organisational improvements

The SSIC included four organisational objectives expected to be reached by integrated care initiatives: care coordination; effective cooperation between care providers; adequate competences; professional satisfaction. Representatives were asked to state if these organisational aspects had improved in their initiative, using a 4-points Likert scale ranging from 1 = strongly disagree to 4 = strongly agree. Internal consistency for the five items was acceptable (Cronbach alpha = .70) and a mean score was computed on the four items (scores close to four indicating organisational improvements observed by representatives).

The moderators: barriers to integrated care

Eleven barriers to integrated care were considered from the ICARE4EU project (297): five professional-related barriers (inadequate knowledge/ skills of care providers regarding patient involvement; negative attitudes of care providers; inadequate support for care providers; inadequate collaboration between care providers; lack of time of care providers), four patient-related barriers (inadequate patient knowledge/ skills in self-management; patient negative attitudes; inadequate support for patients; inadequate support of informal caregivers such as co-care providers) and two financial barriers (inadequate funding (e.g. for implementation of supporting tools); inadequate payment or compensation system). Respondents were asked to state – based on their experience - to what extent these barriers were hampering patient involvement using a 4-points Likert scale ranging from 1 = strongly disagree to 4 = strongly agree. Internal consistency for the three types of barriers was acceptable (all alphas and inter-item correlations > .75); mean scores were computed for each type of barriers (scores close to four indicating presence of barriers).

Initiatives' characteristics

The questionnaire collected additional information about characteristics of the integrated care initiatives: the representatives' role in the initiatives (11 roles including director/CEO, project manager, nurse, family physician, case manager), the specific targets of the initiatives (patients; family-caregivers; healthcare providers; non-medical care providers; administrative staff), the number of existing supportive interventions for professional collaboration and the number of

centred-care interventions, the type and number of professional groups involved (physicians; nurses; paramedical professions; social workers; pharmacists; medical assistants), the total number of professionals in the initiatives, and the geographical area in which the initiatives existed (rural; semi-urban; urban). Using the complete and available information for the initiatives, each one was categorized into one of the following type: mental health and psychiatry; physician networks or health centres; specific groups of patients; transition and coordination; centred on drugs/medications.

Confounding variables

Several confounding variables were also considered: the amount of supportive actions aiming at fostering collaboration between professionals within the initiative among nine possible components (e.g. training, meetings, quality circle), the amount of patient-centred care components targeted by the initiative among seven possible components (e.g. active involvement of patients in decision making; supporting patient autonomy in self-care / self-management), the number of professional groups involved among 12 possible categories, and the total number of professionals involved in the initiative.

Statistical analyses

We first conducted descriptive analyses to characterize the integrated care initiatives. Then, we ran Pearson correlations to assess potential covariations due to confounding variables. Then, we tested our two hypotheses with moderated mediation analyses using linear regressions (298). This type of analysis is used when an indirect association between three variables is expected to be conditioned by a fourth variable. In other words, moderated mediation analyses enables to show that a mediation process, which is responsible for an effect (i.e. the indirect effect of IPC degree on patient care through organisational improvements), depends on the value of a moderator (i.e. integrated care barriers) (299). The PROCESS macro (298) we used for these analyses provides an index of moderated mediation (300), and covariates were added to control for confounding effects. A bootstrap procedure was used (95% IC; 5000 samples) to deal with normality issues, and linearity of the residual was assessed with linear regressions. Heteroscedasticity-consistent standard errors' estimators were applied when the significance of effect was not estimated with bootstrap confidence intervals. Finally, standardized scores were computed and used in the analyses as the questionnaires used different rating scales and first-order interactions were expected.

Since the percentage of missing values was globally low (< 3.2%), we performed single imputation using regression models. Descriptive analyses as well as the PROCESS macro for moderated mediation analyses were performed on SPSS Statistics 25; the software GPower (301) was used to test whether the sample size was adequate for estimation analyses. Sample size analyses indicated

that a sample of 153 observations was statistically sufficient to reach a power of 0.92 for testing moderated mediation models.

3.3 Results

Sample characteristics

Of the 172 representatives contacted, 162 returned the survey (94.2% response rate). Responses from nine initiatives were subsequently removed because they were sub-programs of already included initiatives or because they did not target patients. Characteristics of the 153 initiatives included in our analyses are described in detail elsewhere (210).

Briefly: representatives who responded to the questionnaire were mostly directors or project managers (60.2%) or practicing physicians (25.5%). While 60.8% of the initiatives developed integrated care models for specific health conditions (mental health / psychiatry and specific target groups), 18.3% were physician networks or health centres, 15.7% focused on transition and coordination, and 5.2% concerned medicines mainly. All the initiatives targeted patients and 52.9% targeted healthcare professionals (i.e. physicians, nurses, pharmacists, paramedical professions and medical assistants). Among the included initiatives, 86.9% included healthcare professionals and in 65.4% of these initiatives, at least three different professional groups coexisted. Moreover, 60.1% of the initiatives involved a maximum of 10 professionals (irrespectively of their professional group). Also, initiatives mostly included physicians and nurses, whereas paramedical professionals or social workers were involved in less than half of the cases, and pharmacists or medical assistants in one-quarter of the initiatives.

Moderated-mediation analyses

The results of the preliminary multicollinearity checks (between the predicting variables included in the analyses) are presented in the Additional file N°1. The three moderated mediation analyses that we then conducted, one per type of barrier, showed the overall index of moderated mediation to be statistically significant for financial barriers (Index = -0.13, Boot 95% CI [-0.23, -0.04]), but not for professional (Index = -0.06, Boot 95% CI [-0.16, 0.02]) or patient-related barriers (Index = -0.05, Boot 95% CI [-0.15, 0.03]), suggesting our hypotheses can only be confirmed for financial barriers (Table 9).

Table 9. Regression coefficients for the moderated mediation analysis, with financial barriers as moderator.

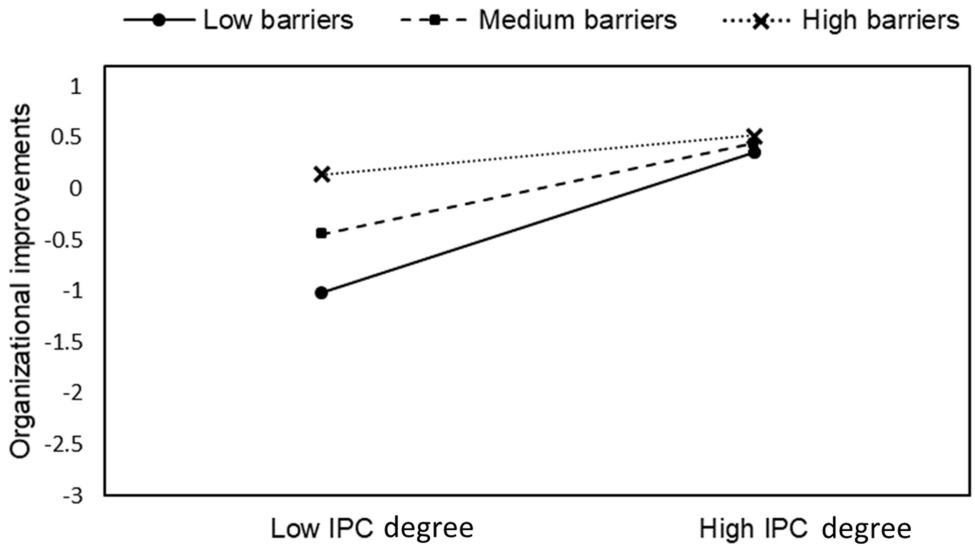
	Outcome of 2-step regression analyses			
	Step 1 : Organisational improvements		**Step 2 : Patient care improvements**	
Predictor	**B**	**(95%CI)**	**B**	**(95%CI)**
Number of centred care services	0.06	(-0.10, 0.21)	0.22	(0.06, 0.38)
Number of professionals involved	0.29	(-0.09, 0.15)	-0.21	(-0.31, -0.11)
IPC degree	0.44	(0.27, 0.60)]	-0.07	(-0.21, 0.07)
Organisational improvements	--	--	0.51	(0.37, 0.66)
Financial barriers	0.33	(0.16, 0.50)	--	--
IPC degree * financial barriers	-0.25	(-0.41, -0.10)	--	--
R^2 (%)		21.9^{***}		39.04^{***}

Conditional indirect effect of IPC implementation on Care improvements due to the initiative		
	B	**95%CI**
-1 SD below the mean	0.35	(0.20, 0.53)
Mean	0.22	(0.13, 0.34)
+1 SD above the mean	0.09	(-0.01, 0.21)
Moderated mediation index (with Boot 95% CI)		-0.13 (-0.23, -0.04)

Note: Scores are standardised; IPC degree * financial barriers = interaction between IPC degree and financial barriers.

Indeed, analyses revealed an indirect effect of IPC degree on patient care improvement through organisational improvements: a high score of IPC degree was actually associated statistically with an increase of the organisational improvements score (B = 0.44, 95% CI [0.27, 0.60]), which was statistically associated with an increase of the patient care improvements' score (B = 0.51, 95% CI [0.37, 0.66]). This, in addition to the fact that the direct effect of IPC degree on patient care improvements was not significant (B = -0.07, 95% CI [-0.21, 0.07]) confirmed our mediation hypothesis (H1). Moreover, as hypothesized, the indirect effect of IPC degree on patient care improvements was conditional on the presence of reported financial barriers (see details in Table 9). In fact, the indirect effect was statistically significant when respondents reported low or medium financial barriers (mean or -1SD below the mean) but not when they reported high financial barriers (+1 SD above the mean). More specifically, financial barriers moderated the association between the degree of IPC and organisational improvements (B = -0.25, 95% IC [-0.41, -0.10]), suggesting that financial barriers faced by integrated care initiatives hindered the association between IPC degree and organisational improvements (Figure. 11).

Figure. 11. Interaction of IPC degree and financial barriers on organisational improvements.



Note: Low IPC = 1 SD below the mean; High IPC = + SD above the mean. Detailed results of the professional and patient-related barriers are available as supplementary material.

3.4 Discussion

The results of this study confirm our moderated mediation hypotheses for financial barriers only. This suggests that IPC degree within integrated care initiatives was associated with patient care improvements through organisational improvements. However, this was less observed in initiatives facing financial barriers for the implementation of integrated care.

To our knowledge, this is the first study investigating whether the association between the degree of IPC in integrated care and patient care improvements is mediated by organisational improvements. In fact, our results complement the current literature about the impact of IPC on job satisfaction and well-being [11], suggesting that organisational improvements are necessary for IPC to improve patient care in integrated care initiatives. In other words, IPC interventions should adopt a systemic approach to achieve patient care improvements. This is in line with conceptual models considering care outcomes as products of interacting elements. For example, the Chronic Care Model (CCM) (302) promotes productive interactions between prepared, proactive practice teams and informed, active patients, in addition to organisational adaptations (i.e. a high level of professional engagement, development of new skills and responsibilities), to bring benefits to patients (303). Also, De Savigny and Adam (13) consider six important building blocks when strengthening the health system (i.e. leadership/governance, service delivery, human resources, information, financing, medical products, vaccines and technologies, and people) and advocate for a better understanding of the “nature of relationships” among building blocks.

We made the hypothesis that barriers faced by integrated care initiatives could hinder IPC, and found that financial barriers (such as inappropriate patient reimbursements or inadequate funding as measured in our questionnaire) affected the degree to which IPC was implemented within integrated care initiatives. In such contexts, the existence of financial barriers has already been highlighted in the literature. However, they have mostly been described as covert than as major barriers (296). For example, in a recent review on professionals' experiences with IPC in primary care, financial barriers were not cited as such by professionals in any of the 21 included studies (304). The difference between our results and the latter could have three explanations. First, most studies included in the above-mentioned review used qualitative methods and financial barriers were not directly measured. As the latter had to emerge from professionals' discourse, it is likely that financial issues were embedded in more complex representations of factors hindering IPC. For example, financial issues could have been assimilated to organisational barriers in professionals' representations because a lack of financial resources leads to increased workloads or coordination issues. Second, in our study, the majority of respondents were directors or project managers and not professionals directly involved in patient care. As shown in Germany, managers are more likely to explicitly talk about administrative and other cost issues (305). Also, discrepancies between managers and professionals in their perception of the effect of financial aspects on IPC have been described. Indeed, when managers supported the idea of financial solutions (i.e. a shared budget) favouring care coordination and collaboration, professionals considered IPC as requiring a high staff commitment (306). This suggests that financial barriers of both integrated care and IPC are mainly experienced at the managers' level, which is important information considering they are leading the implementation and maintenance of integrated care initiatives.

The question of financial resources remains central when considering IPC within integrated care initiatives. Even though implementing such initiatives is costly, initial financial investment is key for the success of integrated care initiatives (12). However, this initial financial effort may be prohibitive for many integrated care managers (87). Also, even if IPC is expected to be cost-effective for both patients and the healthcare system (279), cost-saving evidence and the time lapse needed for managers to observe such benefits remains less obvious.

There is a clear need for innovation in the financing of integrated care initiatives (307). Our results suggest targeting organisational aspects, for instance, supporting the development of professionals' collaborative competences or facilitating coordination and cooperation between actors within initiatives. In Switzerland, the need for innovative financing models has also been acknowledge by healthcare stakeholders (157,308). Some efforts have been made to promote the uniformity of funding between the ambulatory and hospital sectors (monistic funding), but until

now, without concrete changes (309). Nevertheless, the fee-for-services payment system and high health insurance premiums remain major barriers to the further development of integrated and coordinated care in Switzerland (310).

While interpreting these results, the following limitations need to be considered. First, the operational definition of integrated care used here may be discussed (210). Nevertheless, it was developed after gathering criterion from the literature and discussing with integrated care experts. Second, the data collected was self-reported by representatives of the initiatives, which may lead to response bias. Third, the cross-sectional study design precludes causality ascertainment. Notwithstanding these limitations, we do think that the results of this study will benefit the integrated care community and help further explore financial allocation models.

3.5 Conclusion

This study suggests that IPC implementation within integrated care initiatives leads to organisational improvements, which then benefit patient care. Additionally, it shows that financial barriers interfere with that process. Studies evaluating the impact of IPC within integrated care initiatives should not only target patient care improvements but should also consider organisational ones. More importantly, the role of financial barriers to the development of integrated care should be acknowledged and actions taken to reduce them both at the implementation and at the maintenance stages.

Supplementary material

Additional files for this chapter are available online and in appendix to this manuscript:

1. Descriptive statistics and Pearson's correlations for confounders and variables of interest DOI: https://doi.org/10.5334/ijic.4649.s1
2. Regression coefficients of moderated mediation analysis with professional- and patient-related barriers as moderator. DOI: https://doi.org/10.5334/ijic.4649.s2 (Appendix IV)

Authors' contributions

IG and IPB designed the secondary analyses of data collected in the previous study (Chapter 2). IG analysed the data. IG, SSF and IPB, prepared the manuscript. PB gave inputs to improve the manuscript.

4. Interprofessional & interinstitutional transitional processes for patients with compelx needs: an implementation study

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Abstract

Background: Shared decision making (SDM) processes gathering patients' and professionals' perspectives are needed, especially for patients with complex needs. In 2016, in Switzerland, a pilot intervention started implementing transitional SDM interprofessional and interinstitutional processes (IIPs) for patients admitted to a short-term in-patient care unit and then followed-up in out-patient/homecare. We differentiated iterative IIPs-multilateral and simultaneous IIPs-meetings, involving the patient and at least two professionals, and enabling at least one shared goal. This pilot intervention had other components: holistic assessment of patient needs, a formalized transitional care plan, financial resources and a new position of nurse coordinator.

Aim: The aim of this study was to evaluate the implementation of this pilot intervention, by assessing its feasibility, through fidelity and coverage indicators.

Methods: We used an uncontrolled feasibility study design, and collected data from the patients' records on i) the characteristics of the participating patients and professionals, ii) the fidelity, and iii) the coverage of the intervention, using measures such as the complexity of patients' care needs, the IIPs and the types of actors involved. This study was approved by the Geneva Cantonal Ethics Committee for Research.

Results: Between September 2017 and February 2019, 453 patients were included in the study. Mean age was 82.3 years, 65.6% of them were women, and 61.1% were considered to have complex needs. For complex needs patients, IIPs-multilateral and IIPs-meetings occurred in 78.3% and in 23.8% of the cases, respectively. For these patients, IIPs-multilateral and IIPs-meetings could involve patients/caregivers, in-patient professionals, primary care physician, and homecare in respectively 35.1% and 8.8% of the cases.

Conclusions: Implementation of an intervention targeting formalized transitional SDM interprofessional and interinstitutional processes in a short-stay medical unit was feasible. Since published quantitative evaluation of similar models is scarce, the results of this study are unique. They should support the promotion of IIPs between in- and out-patient actors.

4.1 Introduction

Thanks to socio-economic and technological advances, life-expectancy is increasing. However, because of concomitant increasing prevalence of chronic conditions and social needs, ageing populations put health systems under pressure worldwide (1,2). To overcome this pressure, health systems must adapt, reduce "systemic (13)" fragmentation, and undergo radical changes towards care integration(8). Among the focuses of care integration, transitions of patients between care settings and/or care providers have been highlighted (311,312), because they represent vulnerable periods where information may be lost or misinterpreted. Such situations impact negatively the quality of care, users' satisfaction, and they increase hospital readmission, avoidable morbidity and mortality (25–28,312–314). To reduce these negative effects, transitional care - described as "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" (315) - is being increasingly considered. These actions have been shown to reduce the risk of readmission to hospital and to increase patients' and professionals' satisfaction (45,316,317). Recommendations for improved transitions include various transitional processes (25,42–45,318–321). They are especially relevant for patients with complex needs, those with multiple bio-psycho-social and environmental problems and/or uncoordinated services (41,61,72,190,315,322,323). Indeed, the dynamic interactions of their various health conditions and characteristics may make their follow-up very uncertain (41,322), thus increasing the need for improved transitional processes. The latter should include patients' and caregivers' initial and continuous assessments to better understand both parties' preferences and needs. These processes should also gather the multiple perspectives of the professionals involved, and should prioritize goals and actions through shared decision making (SDM) processes (40,41). Finally, they should enable the development of a personalised care plan, thus structuring the follow-up in the subsequent setting (45,324–326).

The Swiss health system is acknowledged for its quality, equity and access to care (2,327). However, it is also acknowledged for its fragmented organisation (1,2), which can be explained by several characteristics of the Swiss health system: i) its federalist organisation, with responsibilities split between the federal, cantonal and local levels; ii) the absence of a binding federal regulatory framework for integrated care; iii) a mandatory health insurance scheme operationalised by more than 20 companies; iv) complex financing and billing mechanisms precluding coordination between actors; vi) societal valorisation of hyper-specialization, vii) and an array of care providers organisations, ranging from individual practices, group practices and institutions specialising in a particular type of care (e.g. homecare) to large medical networks and hospital structures. To reduce this fragmentation, several actors have called for improved care integration, including

transitional aspects (88,236,237,241,242,308,328,329). Currently, numerous integrated care initiatives exist in Switzerland (210), among them, *Cité générations*, a private medical home set up in 2012 in the Canton of Geneva (179). Besides ambulatory care provided by physicians and a variety of allied healthcare professionals including homecare, *Cité générations* includes a short-term in-patient care unit (UATm throughout the text, for "Unité d'Accueil Temporaire médicalisée", in French). The UATm targets patients needing short stays (≤10 days) for medical care and/or geriatric assessment. This unit has been shown to provide good quality of care, and to be a cheaper alternative to standard hospitalisation for the targeted group of patients (179).

In 2016, within *Cité générations*, we started an innovative pilot intervention aiming at improving care transitions of patients with complex needs navigating between out-patient/homecare and the UATm in-patient setting. Because of its pilot nature and of resource constraints, this intervention could not be evaluated for efficacy and effectiveness. The aim of this study was thus to determine to which extent the implementation had occurred (330). For this purpose, we assessed its feasibility, through coverage and fidelity indicators.

4.2 Methods

Study design

We used an uncontrolled feasibility study design focusing on implementation.

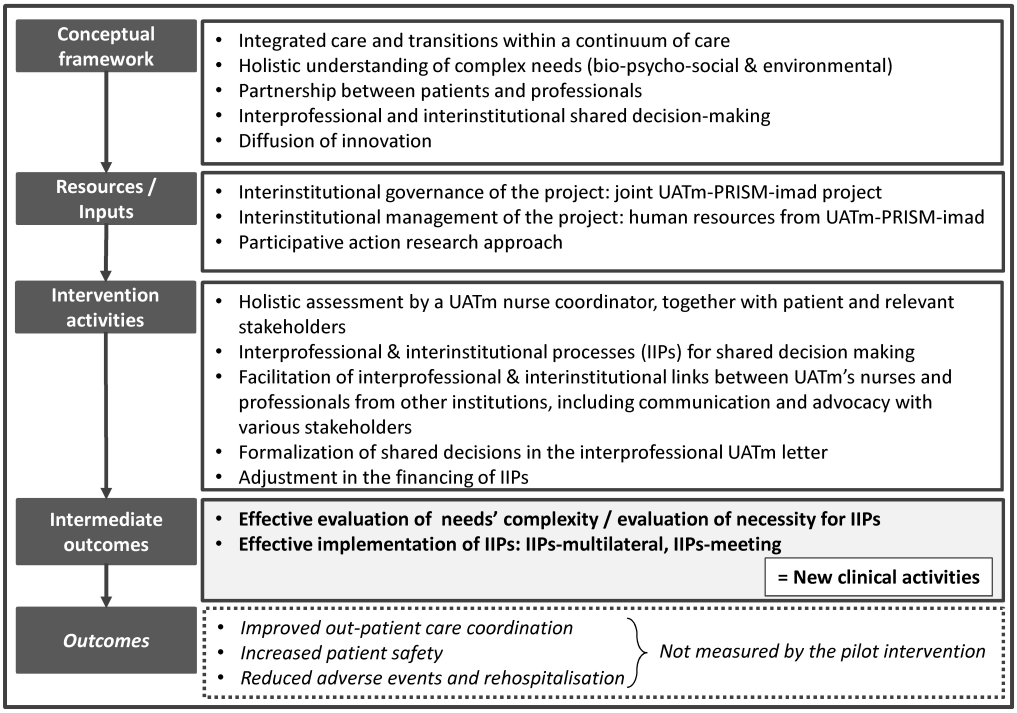
Population and setting

The populations targeted by the evaluation were both patients and their healthcare professionals. Patients included in the intervention were all those who stayed at least one night at the UATm (Onex, Switzerland), without other exclusion criteria. Healthcare professionals included those who could be expected to take part in interprofessional and interinstitutional transitional processes (IIPs) during the patients' stay or within 30 days after their returning home: UATm nurse coordinators, UATm geriatricians, homecare nurses and primary care physicians.

Pilot intervention

This pilot intervention is detailed in the introduction of this manuscript (Section 1.4) and in the Figure. 12. For the purpose of this chapter, we will only summarize it here.

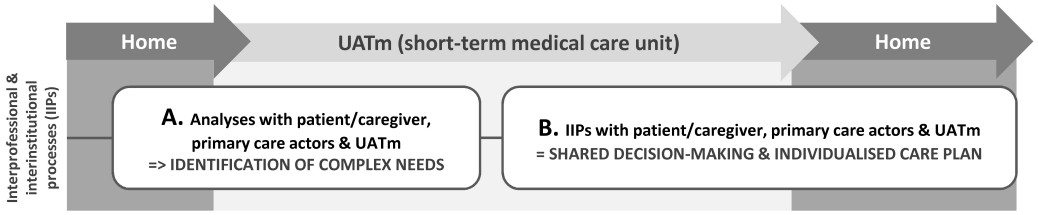
Figure. 12. Logic model of the intervention



This pilot intervention aimed at implementing interprofessional and interinstitutional transitional shared decision making processes (IIPs) when patients with complex needs navigate back and forth between out-patient and home care to an in-patient setting. The intervention was designed using an action research approach (104), and involved both the UATm's staff (geriatricians and nurses), representatives of a non-governmental organisation promoting integrated care in Geneva (PRISM) (185), and representatives of the Geneva public Institution for Home Care and Assistance (imad throughout the text, for "Institution genevoise de maintien à domicile"(183), in French). This approach enabled the collection and management of barriers and facilitators which emerged throughout the intervention (187). The intervention relied upon on three major conceptual elements. First, patients and their caregivers are considered as partners (73), meaning that their needs and preferences are identified, and that patients and caregivers are personally involved in the decision making processes. Second, the UATm stay is considered within a longer continuum of care (331). This means that primary care professionals involved before and after the UATm stay are acknowledged and involved in the decision making processes during the stay, as experts of the patients' specificities and needs. Third, the patients', caregivers', primary care providers' and UATm professionals' expertise facilitate a holistic analysis of patient's (complex) needs in various domains such as medical conditions, socio-economic issues, care coordination (72,332). This means that the needs must be assessed, and dealt with through interprofessional and interinstitutional shared decision making (SDM) processes (IIPs), to elaborate individualised care plans.

The intervention had five major activities (Figure. 12): the holistic assessment of patient needs, interprofessional and interinstitutional processes (IIPs), formalized care plans, financial resources, and the introduction of the position of UATm nurse coordinator. The effective implementation of two new clinical activities were the two expected intermediate outcomes, primarily targeting patients with complex needs (Figure. 13).

Figure. 13. Generic model of the UATm new clinical activities



A) The operational definition of "complex needs" was used for any interacting elements of patient and healthcare, which could benefit from interprofessional and interinstitutional processes.

B) Two types of SDM IIPs were identified: i) bilateral/multilateral coordination processes during UATm-stay (=IIPs-multilateral), and ii) coordination meeting (=IIPs-meeting) during or shortly after the UATm-stay. The main difference between the two processes is the timing of the decision making processes: iterative in the IIPs-multilateral, simultaneous in the IIPs-meeting. However, these two processes have the same outcome (i.e. identification of at least one shared goal), and they have similar characteristics in terms of interprofessional and interinstitutional actors involved (Table 10).

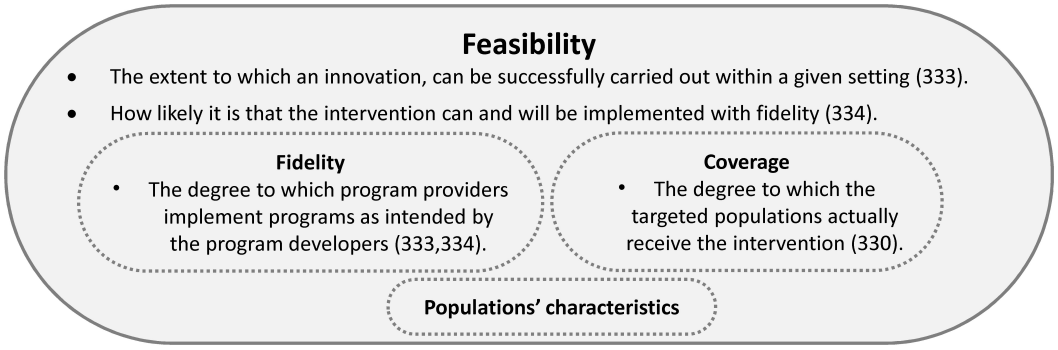
Table 10. Description of interprofessional & interinstitutional transitional processes (IIPs)

	Bilateral/multilateral coordination processes during UATm-stay (=IIPs-multilateral)	**Interprofessional & interinstitutional coordination meeting (=IIPs-meeting)**
Actors	**Non-professionals :** at least patient and/or legal 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 organisations	
Shared decision-making processes	**Asynchronous**: iterative multilateral contacts can occur « live » (i.e. physically, phone or other supports), or via email and other asynchronous supports (i.e. fax)	**Simultaneous**: at least three actors are actually meeting
Outcomes	At least one shared goal identified out of SDM processes	
Indicators	Multilateral coordination processes occurred during UATm stay: yes/no ▪ Actors involved ▪ Outcome present: yes/no	Coordination meeting at UATm or at home took place : yes/no, date ▪ Actors involved ▪ Outcome present: yes/no

Measures

Between September 1st 2017 and February 28th 2019, we collected three categories of indicators to evaluate the feasibility of the intervention: populations' characteristics, fidelity and coverage indicators. Definitions of these categories are provided in Figure. 14.

Figure. 14. Categories of indicators and their definitions



To characterize the populations, we collected the following variables: patients' age at entry, gender (men/women), date of entry, length of stay; presence of complex needs (yes/no); type of primary care physicians' practices (public practice/private practice/other); type of homecare organisations (public/private); professionals involved during the 30 days post-UATm (for patients followed by the public homecare institution only) (primary care physician yes/no; homecare yes/no).

For the feasibility of the intervention, we used fidelity and coverage indicators:

- For the fidelity of the intervention, we monitored indicators measuring the two new clinical activities of the program: A) assessment of complex needs, B) interprofessional and interinstitutional processes (IIPs). Complex needs (yes/no) were assessed according to our operational definition: “non-standardized” complex needs assessment by UATm nurse coordinators, made on the basis of the following operational definition of “patients with complex needs”: any situation for which UATm answers "yes" to the question "would this situation benefit from IIPs?”. To minimize misclassification, the categorization of 63 UATm patients was performed by at least the main author and one other UATm nurse coordinator during the year before starting the data collection. IIPs were measured according to the different elements included in their definitions (Table 10): type of IIPs (IIPs-multilateral, IIPs-meeting at the UATm, IIPs-meeting within 30 days after UATm). To minimize misclassification, UATm data were collected iteratively (i.e. every fortnight) and uncertainties were discussed by the main author with the nurse coordinators. Uncertainties regarding IIPs-meeting after UATm were coded “no IIP”. Other activities of the intervention (Figure. 12) were monitored as follow: i) we did not measure the fidelity of the formalized care plans separately, since this formalization was included in the IIPs definitions (Table 10); ii) we measured the continuity of financial resources allocated for the project management and for the nurse coordinator’s salary only; and iii) we monitored the number of persons in the position of UATm nurse coordinator.
- For the coverage of the intervention, we measured whether IIPs had been implemented for patients with complex needs (yes/no), and which IIPs had been implemented (IIPs – multilateral yes/no; IIPs-meeting yes/no). We also collected data on the type of actors involved in the IIPs (patient/caregiver/UATm/primary care physician/homecare). For comparison purpose, we collected the same data for patients without complex needs.

The majority of data were extracted from the patients’ electronic health records (EHR) used at the UATm and at the public homecare institution. Other data were extracted from the project management documents. Details on collected data and their sources are available in Appendix V.

Statistical analyses

Descriptive statistical analyses were performed on collected variables (e.g. gender, type of professionals, IIPs). Chi2 were performed to compare of proportions between patients with and without complex needs (e.g. IIPs). Student t-tests were performed for comparisons on continuous variables (e.g. age). We used SPSS 25 for these analyses.

4.3 Results

Within this 18 month-study, 453 patients were admitted at the UATm. Detailed characteristics of patients and healthcare professionals are presented in Table 11 and in Table 12. Most patients were older than 80 years (mean age=82.3 years, median=84.8 years), and women represented 2/3 of the patients. Almost all patients had a primary care physician, and 2/3 received homecare services, mainly from the public homecare institution. The majority of the 177 different primary care physicians involved in the intervention, worked in private practices; they took care of 89.6% of the patients staying at the UATm. Two UATm nurses equally shared the coordination position and four geriatricians were successively employed at the UATm.

Table 11. General characteristics of UATm patients (n=453*)

	n	**% or means (SD)**
UATm patients	**453***	
Women	*297*	*65.6 %*
Age (mean)		*82.3 years (10.8)*
Length of stay (mean)		*9.9 nights (6.9)*
Type of primary care follow-up for UATm patients		
Follow-up by homecare	*355*	*78.4 %*
Follow-up by public homecare institution	*256*	*56.5 %*
Follow-up by primary care physician	*445*	*98.2 %*

*The total of 453 UATm patients represents 371 different individuals: 316 for a single stay, 55 for at least two stays.
Abbreviations: SD: standard deviation; UATm: French acronym for a short-stay medical unit.

Table 12. General characteristics of involved healthcare professionals (n≥305[#])

	n
Primary care professionals	
Homecare organisations	*8*
Public homecare institution	*1*
Nurses from the public homecare institution	122
Private homecare structures[#]	*7*
Primary care physicians	*177*
Public practice physicians	*16*
Private practice physicians	*158*
Physicians with a practice outside the Canton of Geneva	*3*
UATm's staff	
Nurse coordinators	*2*
Geriatricians°	*4*

[#] Data on the structure in charge the homecare follow-up was collected, but not on the individual nurse(s) in charge of this follow-up.

Among the 453 patients included in the evaluation, 277 (61.1%) were considered to have complex needs. Patients with complex needs were three years older than patients without complex needs. They were more likely to stay more than 10 days at the UATm, compared to patients without complex needs (49.8% vs. 23.3%). Additionally, the proportion of homecare follow-up was higher in patients with complex needs (91.3%), than in patients without complex needs (58.1%). The proportion of patients with a public practice primary care physician was slightly higher in the group with complex needs than in the group without complex needs (Table 13) .

Table 13. Characteristics of patients according to the complexity of their needs† (n=453)

	Complex needs : yes (n=277)	**Complex needs: no (n=176)**	**Statistical tests**	
	% or means (SD)	*% or means (SD)*		
Gender				
Women	*66,1%*	*64,8%*	*Chi2 = 0.08*	*p=0.78*
Men	*33,9%*	35,2%		
Age	**83,7 years (9,9)**	**80,1 years (11,8)**	*t = 3.36*	*p<0.001*
Length of stay				
1-10 days	*50,2%*	*76,1%*	*Chi2 = 18,9*	*p=0.001*
> 10 days	*49,8%*	*23,9%*		
Type of primary care follow-up for UATm patients				
Homecare				
Public homecare organisation	*65,3%*	*42,6%*	*Chi2° = 0.14* *Chi 2¥ = 70.9*	*p=0.71* *p=0.001*
Private homecare organisation	*26,0%*	*15,5%*		
Without homecare	*8,7%*	*42,0%*		
Primary care physicians				
Public practice physicians	*10,5%*	*4,0%*	*Chi2° = 5,99*	*p=0.014*
Private practice physicians	*87,7%*	*92,6%*		
Other physicians or without primary care physician#*	*1,8%*	*3,4%*		

† Complexity assessed by the UATm nurse coordinator following operational definition of complex needs: any situation for which UATm answers "yes" to the question "would this situation benefit from IIPs?"

° Chi2 calculated for difference in complexity of needs between patients with public and private follow-up

¥Chi2 calculated for difference in complexity of needs between patients with public, private or no homecare follow-up

*Other physicians = physicians with a practice outside the Canton of Geneva

Patients without primary care physician means, for e.g. conflict between patient and physician preventing follow-up, patient rejects the idea of a medical follow-up, physician deceased

Abbreviations: SD: standard deviation; UATm: French acronym for a short-stay medical unit

Fidelity result for interprofessional & interinstitutional processes showed that IIPs occurred for 295/453 patients. IIPs-multilateral and IIPs-meetings in the UATm occurred in 65.1% and in 15.0% of the cases, respectively. In addition, IIPs-meeting at home (within 30 days after UATm) occurred for 11.8% of the patients (data only collected for patients still followed by the public homecare institution after their UATm stay, n=204).

Coverage result showed that IIPs were more frequent for patients with complex needs than for patients without complex needs (Table 14). IIPs-multilateral occurred for almost 80% of the patients with complex needs, but for less than half of the patients without complex needs. IIPs-meetings in the UATm occurred for almost a quarter of patients with complex needs, but for only 1% of patients without complex needs. Further analyses show that while IIPs-meetings at home (within 30 days after UATm) occurred for 14.1% of the patients with complex needs, they occurred for 6.5% of patients without complex needs (conditions for the calculation of Chi2 not met). We also observed that there were more IIPs for patients with complex needs staying more than 10 days at the UATm compared to those staying between one and nine days: IIPs-multilateral in 89.1% and 67.6% of the cases (Chi2 18.9, p=0.0001), respectively, and IIPs-meetings in 33.3% and 12.2% (Chi2 9.65, p=0.0001), respectively.

Table 14. Implementation of interprofessional & interinstitutional processes (IIPs) in the UATm according to the complexity of patients' needs (n=453)

	Complex needs : yes (n=277)		**Complex needs: no (n=176)**		**Statistical tests**	
IIPs – multilateral						
Yes	*(n=217)*	*78.3%*	*(n=78)*	*44,3%*	*Chi2 =57,09*	*p=0,000*
No	*(n=60)*	*21.7%*	*(n=98)*	*55,7%*		
IIPs - meeting at UATm*						
Yes	*(n=66)*	*23.8%*	*(n=2)*	*1,1%*	*Chi2 =32,89*	*p=0,000*
No	*(n=211)*	*76.1%*	*(n=174)*	*98,9%*		

* All patients with IIPs meetings at the UATm also had bilateral/multilateral IIPs

Analyses of actors involved in IIPs for complex need patients with a follow-up by both primary care physicians and homecare nurses (n=251) (Table 15) showed that the former were less frequently involved in IIPs than the latter. Primary care physicians and homecare nurses were involved in IIPs-multilateral for 46.3% and 68.2% of the complex-needs patients, respectively. A third of the IIPs-multilateral involved both primary care actors. Primary care physicians and homecare nurses were involved in IIPs-meetings at the UATm for 14.4% and 18.4% of the complex-needs patients,

respectively. Both primary care actors were involved in IIPs-meetings at the UATm for a little less than 10% of these patients.

Table 15. Involvement of primary care actors in IIPs for complex needs patients (n=251)*

	n's	%
IIPs – multilateral by UATm involving	**206**	**82,1%**
patients/caregivers, UATm, primary care physician, homecare	*88*	*35,1%*
patients/caregivers, UATm, primary care physician	*28*	*11,2%*
patients/caregivers, UATm, homecare	*83*	*33,1%*
patients/caregivers, UATm	*7*	*2,8%*
IIPs - meeting at the UATm involving	**61**	**24,3%**
patients/caregivers, UATm, primary care physician, homecare	*22*	*8,8%*
patients/caregivers, UATm, primary care physician	*14*	*5,6%*
patients/caregivers, UATm, homecare	*24*	*9,6%*
patients/caregivers, UATm	*1*	*0,4%*

* Only patients with at least a follow-up by primary care physician and homecare

Finally, the funding allocated for the project management and for the nurse coordinators' salary remained stable throughout the period under study. The number of persons in the position of UATm nurse coordinator was gradually reduced from 2 to 1 from autumn 2018 onwards. However, this did not affect the actual FTE dedicated to the UATm. Indeed, both the nurses had other activities in parallel to their position at the UATm, and had worked part-time at the UATm at the beginning of the intervention.

4.4 Discussion

Based upon fidelity and coverage indicators, this implementation study assessed the feasibility of a pilot intervention aimed at improving care transitions of patients with complex needs navigating back and forth between out-patient/homecare and the UATm short-stay in-patient setting. This study provided four main results: i) the vast majority of UATm patients were considered to have complex needs; ii) interprofessional & interinstitutional processes (IIPs) were implemented for the majority of patients with complex needs, and to a lesser extent for patients without complex needs; iii) the majority of IIPs for complex needs patient were multilateral while IIPs-meetings at the UATm took place for only a quarter of these patients; iv) the majority of IIPs-multilateral for complex need patients involved homecare, while a minority of IIPs-meetings for complex needs patients involved both primary care physician and homecare. Other indicators showed that all UATm patients were assessed for complex needs, that funding for salaries and project

management was secured, and that the UATm nurse coordinator position was held throughout the period.

Our results show that this intervention was indeed feasible. However, it remains unclear how to assess the degree of feasibility. Should higher percentages of IIPs be expected? For patients with complex needs only? How to explain the different percentages of IIPs-multilateral and IIPs-meetings? To explore these questions, we turned to available research.

Published literature on care transition improvements mainly focuses on two different models of transitions: i) discharge management focusing on patients' empowerment through the addition - to existing providers – of one or several new professionals whose task is to improve transitions from in- to out-patient settings (38,39,317,333–338); ii) reinforcement of communication between in-patient and out-patient providers (43,313,339,340). Published results from the "discharge management" model mainly focus on model fidelity for intervention patients only, on the positive impact of improved care transitions interventions on various outcomes such as rehospitalisation (38,39,317,334–338), and on numerous qualitative elements (43,341–343). Publications from the "reinforced communication" model include measures of the frequency with which in-patient providers reported communicating directly with out-patient providers. For example, Oduyebo et al. showed that "successful communication" was reported in 36,7% of the cases, while "no attempts" were reported in 54,4% of the cases (339). Kripalani et al. showed that "direct communication between hospital physicians and primary care physicians occurred infrequently (3%-20%)" and that discharge summaries were not systematically available (12%-77%) (313). Two main lessons can be drawn between this literature and our study.

First, there is a third path, which acknowledges both the need for improved care transitions and for improved communication between in- and out-patient actors. This third path was explored by the UATm intervention, with formalized interprofessional and interinstitutional shared decision making of three categories of experts, namely patients, in- and out-patient professionals. Our results show that i) IIPs can take place for the majority of patients within a transitional phase; ii) in- and out-patient actors can share decision making through IIPs for the majority of patients with complex needs. To our knowledge, feasibility evaluation using a quantitative approach of models similar to the UATm intervention scarcely exist in the published literature (32,41). The results of our study are therefore unique, even if only as a step towards better understanding of IIPs implementation.

Second, discharge management (312,318,324), meaning processes starting at the hospital and unclearly articulated with pre-existing primary care actors, potentially induces dissatisfaction among professionals and patients (42,344–347) and has unclear outcomes (39,348). Building upon the interdependence of in- and out-patient actors (331), our pilot UATm intervention was designed

to increase transitional shared decision making (SDM) processes between patients, their caregivers, in- and out-patient healthcare providers. The intention was to shift from a “discharge” to a “back-to-community” management, by fostering through IIPs facilitation the synergy between the UATm’s geriatric expertise, patients’ specific needs in the community, and the long-term care expertise of their primary care actors. The hope was that this facilitation of IIPs would not only be useful for the transition phase, but would also further reinforce IIPs and teamwork in the primary care context. Our intervention showed that IIPs could occur, and that homecare organisations and primary care physicians were indeed involved, however not systematically, and in various proportions depending on the type of IIP. Variables such as the complexity of needs and the length of stay partly explain the variation of IIPs’ occurrence. However, a more systematic involvement of primary care actors in IIPs remains an issue that our intervention - and present evaluation- did not solve entirely. Indeed, there might be specific conditions where transitional IIPs with primary care actors are either i) irrelevant, or ii) postponed (rejected) although probably relevant. While Appendix II illustrates three situations of relevant, irrelevant, and postponed IIPs, our point can be summarised as follows: i) irrelevant conditions for IIPs might comprise situations where out-patient actors formally expect the UATm to manage a single acute episode without broader assessment by the UATm, for instance in situations where IIPs are already happening in the out-patient setting, with actors mastering such processes: ii) postponed (rejected) IIPs probably reflect remaining resistance to IIPs, such as underestimation of potential outcomes of IIPs compared to the time and energy required for such IIPs, discrepancies in the perceived roles of in-patient and out-patient actors during a UATm stay, lack of experience in interprofessional and interinstitutional processes in conflicted situations, out-patient professionals feeling unexperienced in the situation and genuine lack of time and/or resources for IIPs (42,328,349). While exploring such elements could help better assess the results of our fidelity and coverage indicators, dealing with them would need further systemic change management and diffusion of innovation (37,193,350,351).

In our pilot intervention, the action research methodology (104) approach helped us deal with change management for IIPs in two main ways. First, the IIPs were iteratively co-constructed over 4 years (2016-2019) in close collaboration by field actors from three institutions. This enabled the practices to be built with a multi-institutional perspective, developing, testing and adjusting new IIPs against both in- and out-patient perspectives. This is in line with recommendations highlighting the importance of organisational partnerships for care integration (352). Second, the action research methodology resonated well with the agility of the UATm’s governance and nurse coordinators. Indeed, innovative practices could be easily discussed, adjusted and supported by the governance (e.g. the interprofessional transition letter, signed both by the UATm nurse coordinator

and the UATm geriatrician). Moreover, capacity building (353,354) of the two UATm nurses was facilitated by their leadership and personal involvement. Finally, IIPs could be built into UATm's processes and several systemic elements could be adjusted (see Intervention activities in Figure. 12). This is in line with recommendations highlighting the need for active dissemination strategies (106) and for stakeholders' involvement in implementation (100). However, it did take time: more than 120 meetings took place from the initiation of the pilot intervention (September 2016) through the end of the data gathering process (February 2019). This echoes a recent research arguing that "familiarity and a shared expectation of new ways of working (which include SDM) are likely to take time to develop (41)".

Strengths and limitations

The main strength of our study was the evaluation of an intervention targeting shared decision making interprofessional and interinstitutional processes (IIPs) that included all patients of an in-patient setting over 18 months. However, when interpreting our results, four main limitations need to be considered. First, the existing heterogeneity of criteria for complex needs, which led us to use a pragmatic way of categorizing patients with / without complex needs. Second, the absence of a consensual definition for IIPs, which led us to use a 4-items description, whose data collection depended on their traceability in the electronic medical records. Third, the absence of baseline measures, which was linked to our action research approach. In the absence of similar fidelity results, we are confident that the results from our pilot intervention will encourage further research in this field. And fourth, following research on implementation (e.g. (355,356)), we could have strengthened our evaluation by formally collecting other categories of indicators, such as acceptability, adoption or appropriateness.

4.5 Conclusions

Shared decision making (SDM) processes gathering patients', caregivers' and relevant professional' expertise is needed, especially when caring for patients with complex needs. To reinforce care integration and care continuity of the latter when they navigate back and forth between in-patients and out-patients structures, formalized SDM interprofessional and interinstitutional processes (IIPs) involving patients/caregivers, in-patients and primary care actors, are required. Implementation of an innovative intervention targeting IIPs in a short-term medical unit appeared to be feasible, and also managed to include the targeted patients and healthcare professionals. However, it remained unclear from our indicators, whether a highest number of IIPs should or could be targeted. Accordingly, the results of this evaluation should promote research on IIPs implementation in various transitional contexts, and for various patients. Our results should also

further promote IIPs implementation between in- and out-patient actors. However, this will only happen with sustained systemic change management, including formalized support from the various organisations involved, meaning valorisation of individual implementers, as well as time and financial resources for IIPs.

Supplementary material

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

Authors' contributions

SSF, with inputs from SM and GM, designed the study under the supervision of IPB. SSF, SM and GM collected the data. SSF, with support from IG, analysed the data. SSF, with precious inputs from SM, GM, IG and IPB, prepared the manuscript. Earlier versions of this chapter were also submitted to stakeholders: Dr Philippe Schaller (Cité générations) and Mrs Catherine Busnel (imad).

5. Realist evaluation of a pilot intervention implementing interprofessional & interinstitutional shared decision making processes for transitional care

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Abstract

Background: Interprofessional and interinstitutional processes (IIPs) gathering patients' and professionals' perspectives are needed. In 2016, in Switzerland, we initiated a pilot intervention to implement transitional IIPs between a short-term in-patient care unit and primary care professionals.

Aim: Between 2018 and 2019, we evaluated this pilot intervention and conducted a study to answer the following questions: for whom, with whom, in which context and how, have IIPs been implemented?

Methods: We used a realist evaluation design. Our initial intervention theory was tested through semi-structured individual interviews with patients, primary care professionals, and staff from the short-term in-patient care unit.

Results: Analysis of the 29 interviews showed that a patient's UATm stay, with actors committed to facilitate IIPs, reinforced the latter's perceived appropriateness and implementation. The perception of this appropriateness varied according to different contextual elements, such as the complexity of needs, the pre-existing collaborative practices and the purpose of the UATm stay. Interprofessional and interinstitutional processes between in- and out-patient settings were perceived as welcome innovations, especially by homecare professionals.

Conclusions: Since IIPs occurred in a context of fragmentation and heterogeneity of practices, sustained efforts are required from actors implementing them, as well as from organisations supporting them.

5.1 Introduction

When asked about their expectations from healthcare services, patients formulate statements such as “I can plan my care with people who work together to understand me and my carer(s), allow me control, and bring together services to achieve the outcomes important to me (258).” In other terms, patients expect to be part of their needs assessment (40) and to experience shared decision making processes (41). Patients “living with complexity (55)” face challenges to fulfil these expectations.

“Complexity (55,56,58,68)”, “complex needs (26,40,61–64)” or “complex patients (65,67)” are used in the healthcare literature with heterogeneous definitions. For the purpose of this study, we defined “complex needs (CN)” as a propriety emerging from interacting bio-psycho-social and environmental elements (69,70), for example: patients’ individual characteristics (e.g. (instable) chronic disease(s), physical and/or mental disabilities, socio-economic difficulties), characteristics of the healthcare system around patients (e.g. multiple (uncoordinated) actors, lack of adequate professional resources, limited access to care). To deal with these CN, interprofessional and interinstitutional shared decision making processes, and adequate coordination between actors along patients’ care paths are recommended (8,26,40,41). On this basis, we used the operational definition of “complex needs (CN)” for any interacting elements around a patient which could benefit from interprofessional and interinstitutional processes (IIPs).

Patients with CN face specific issues when moving between in- and out-patient settings (26). Indeed, inadequate transitions between settings have been shown to jeopardize patient safety and autonomy, which can lead to adverse events and rehospitalisation (8,25,27–29). Inadequate transitions can be due to deficient (inter)professional practices (30,31), to obstacles in (inter)institutional procedures (32,33), to variable degrees of patient engagement & empowerment (29,34–36), and to resistance to innovation (37). On the contrary, better transitions have been shown to improve (38,39) the aforementioned issues through: i) holistic assessments of patients’ preference and needs; ii) interprofessional and interinstitutional processes (IIPs), between, for example, in- and out-patient healthcare providers; iii) inclusion of patients and caregivers in shared decision making processes (26,40–45). However, interventions targeting transition improvements must manage numerous interacting elements of the health system (e.g. human resources, service delivery, governance, financing, information) (6,13). Such complex interventions need specific evaluation methods (8,102,116,357).

5.2 Background

Several characteristics of the Swiss healthcare system challenge transitions improvements between in- and out-patient settings: i) complicated financing schemes (2) and unclear reimbursement of IIPs (202); ii) multiple healthcare organisations with own governance, and buildings spread over large areas (2); iii) hyperspecialisation (2,358); and iv) a variety of healthcare professionals with traditional (mono)professional roles (88,349).

Within this Swiss context, a private medical home (*Cité générations* (179)) offers out-patient services provided by a variety of professionals, such as primary care physicians (PCPs), specialist physicians, and two teams of the Geneva public Institution for Homecare and Assistance (imad throughout the text, for "Institution genevoise de maintien à domicile"(183), in French). *Cité générations* also includes a medical short-term in-patient care unit (UATm throughout the text, for "Unité d'Accueil Temporaire médicalisée", in French), which targets patients needing short stays (≤10 days) for medical care and/or geriatric assessment (179), and admits an average of 300 patients each year (359) (see Chapter 4). The UATm mainly employs care assistants (196), registered nurses, and geriatricians. In the Canton of Geneva, while the UATm is the only medical short-term in-patient care unit, two other short-term units provide respite care only (184).

In 2016, an innovative pilot intervention started in the UATm (see Chapter 1): it aimed to improve care transitions for patients with CN, by implementing interprofessional and interinstitutional shared decision making processes (IIPs). Built under a multi-organisational governance – *Cité générations*, PRISM (185) and imad (183) (see details in Section 1.3) - this intervention was mainly implemented by the main author of this thesis and two UATm nurses. This intervention (see details in Section 1.4) adopted a change management approach (37) to innovation diffusion in health services, that used action research design (104). It targeted various components of the system: human resources (new position of UATm nurse coordinator), information (interprofessional transition letter), financing (private resources for the UATm coordinator's salary and adjusted billing practices (202) for primary care physicians), and clinical service delivery (assessment of patients' needs and IIPs). We identified three types of IIPs, that differed in their asynchronous (IIPs-multilateral) or simultaneous (IIPs-meeting) nature, and in their timing (in the UATm, at home after the UATm stay) (Table 16).

Between 2017 and 2019, the implementation of the new clinical services (i.e. assessment of patients' needs and IIPs) was evaluated (see Chapter 4). Results showed that IIPs-multilateral, IIPs-meeting in the UATm and at home for patients with complex needs (CN) occurred in 78.3%, 21.7%, and 14.1% of the cases, respectively. They occurred less frequently for patients without CN (44.3%, 1.1%, and 6.5% of the cases, respectively). Albeit significant differences in the implementation of

IIPs between patients with and without CN, this quantitative evaluation did not much help further guide the implementation: it was not clear whether such percentages were sufficient, whether more IIPs could or should be expected. Acknowledging the complexity of the intervention and the limitations of positivist methods for its evaluation (8,357), a realist evaluation was chosen. Its aim was to better understand for whom, with whom, in which context and how IIPs had been implemented (or not). The results of this evaluation were expected to help i) adjust the implementation of IIPs-meetings for patients with complex needs in the UATm , ii) implement IIPs-meetings in similar contexts.

Table 16. Description of interprofessional & interinstitutional transitional processes (IIPs) implemented by the intervention

	Bilateral/multilateral coordination processes during UATm-stay (=IIPs-multilateral)	**Interprofessional & interinstitutional coordination meeting (=IIPs-meeting)**
Actors	**Non-professionals :** at least patient and/or legal 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 organisations	
Shared decision-making processes	**Asynchronous**: iterative multilateral contacts can occur « live » (i.e. physically, phone or other supports), or via email and other asynchronous supports (i.e. fax)	**Simultaneous**: at least three actors are actually meeting
Outcomes	At least one shared goal identified out of SDM processes	
Indicators	Multilateral coordination processes occurred during UATm stay: yes/no ▪ Actors involved ▪ Outcome present: yes/no	Coordination meeting at UATm or at home took place : yes/no, date ▪ Actors involved ▪ Outcome present: yes/no

5.3 Methods

Realist evaluation

Realist evaluation (RE) - a theory-driven approach first suggested by Pawson & Tilley in 1997 (129) - is considered suitable for the evaluation of complex interventions (125,132). RE seeks to explain how an intervention worked within a specific context, and how the expected outcomes were triggered in this context (130,133,136). RE uses an iterative approach (125,129,136): first, an initial intervention theory and middle range theories describe the key contextual elements and the resources used, and outline initial mechanisms linking context and outcomes; second, various Context-Mechanisms-Outcomes configurations (CMO's) are elaborated and tested through a

variety of possible methods; third, the analysis of data produces demi-regularities, which support recommendations resulting from the evaluation. The various terms used in this RE are defined in Table 17. Because RE use is challenging, RAMESE's quality standards were used to support this evaluation (125).

Table 17. Definitions used for intervention, context, mechanisms, outcomes and demi-regularities

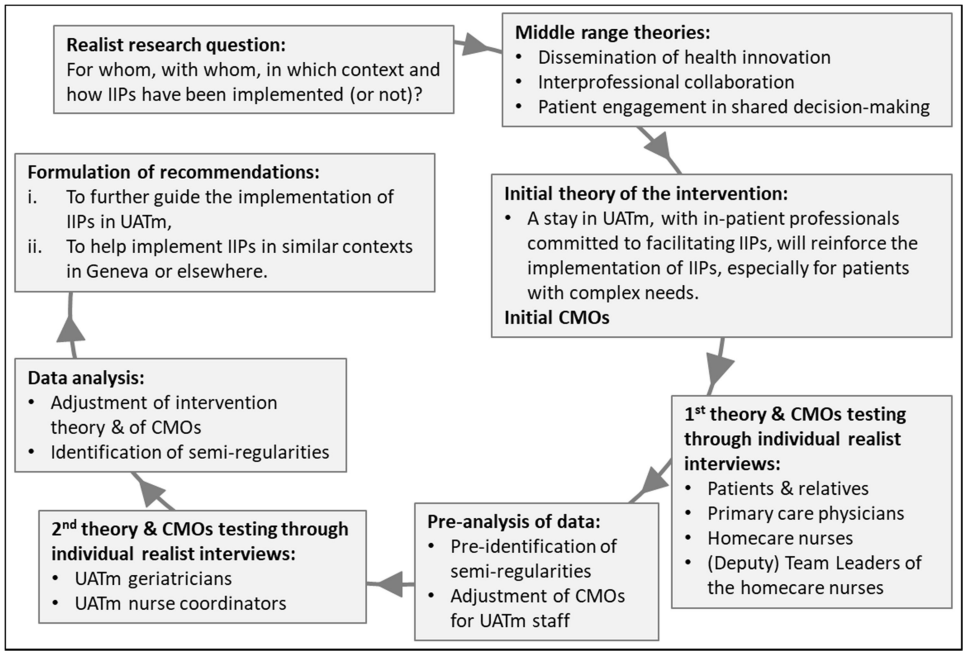
Intervention	Uses various types of resources in order to achieve its objective.
Context (C)	Refers to those elements outside the resources provided by the intervention that may have a causal influence on the production of effects by the intervention.
Mechanisms (M)	Are responses of actors exposed to the resources provided by an intervention in a specific context; mechanisms can be disaggregated into resources (Res, components introduced in a context) and reasoning (Rea, "stakeholders' volition"): M(Res) + C→M (Rea) = O (133).
Outcomes (O)	Are produced by the actors exposed to the resources provided by the intervention, in a specific context. Through ripple effect, outcomes may change the context over time.
Demi-regularities	Are semi predictable patterns of CMOs, i.e. regular occurrences of an outcome following the implementation of an intervention that triggers one or more mechanisms in a particular context.

Sources: Pawson & Tilley 1997 (129), Blaise et al. 2010 (132), Robert & Ridde 2013 (134), Jagosh 2018 (131), Gilmore et al. 2019 (130), Dalkin et al. 2015 (133), Pauton et al 2016 (135)

Steps of the realist evaluation

Using this realist methodology, we planned the steps summarized in Figure. 15, and detailed in the following sections.

Figure. 15. Iterative steps of the realist evaluation



Outcomes, middle range theories, initial intervention theory and CMOs

Since transitions can be improved by interprofessional and interinstitutional processes, we chose IIPs - or their absence - as outcomes.

Middle-range theories originated in the course of the intervention, from discussions between the project leaders, preliminary interviews with primary care actors and the literature. The following three main middle-range theories were considered:

- **Dissemination of health innovation.** Based on work from Greenhalgh (37), we chose to focus on the following elements: the characteristics of the innovation itself, the assessment of its implications for actors involved, the characteristics of the change agents and of the (potential) adopters, the specific UATm context and the broader context of care.
- **Interprofessional and interinstitutional collaboration.** Based on research from D'Amour (31), we chose to focus on the two purposes of IIPs (serving both patient and professional needs), and on the key elements of collaboration (addressing the complexity of patient needs, and integrating the perspectives of each professional, with trust).
- **Partnership between patients and professionals.** Based on the Montreal model (73), we chose to focus on the patients' and caregivers' expertise of their priority and needs, and on their role as partners in their care, specifically within the IIPs. We were also interested in patients' and relatives' engagement in care (35).

On this basis - and building upon barriers and facilitators to interprofessional and interinstitutional processes (IIPs), which we had identified in the literature and in the first stages of our pilot intervention (see Section 1.4) - we gathered the theoretical elements of our intervention, as follows.

Characteristics of IIPs have both negative and positive implications. Negative ones can include spending time for IIPs and for (negotiating) their occurrence, questioning care plan, questioning interprofessional and interprofessional practices, engaging in a care setting different from it's usual own. Positive implications can include better care, clearer care plan, increased patient satisfaction, increased professional satisfaction, increased recognition of out-patient actors. We postulated that the negative implications of the innovation (=IIPs) for out-patient actors (patients included), could be outbalanced by their positive implications, under conditions provided by our intervention. These conditions align with the middle range theories considered, and were used to build up the initial intervention theory (Table 18).

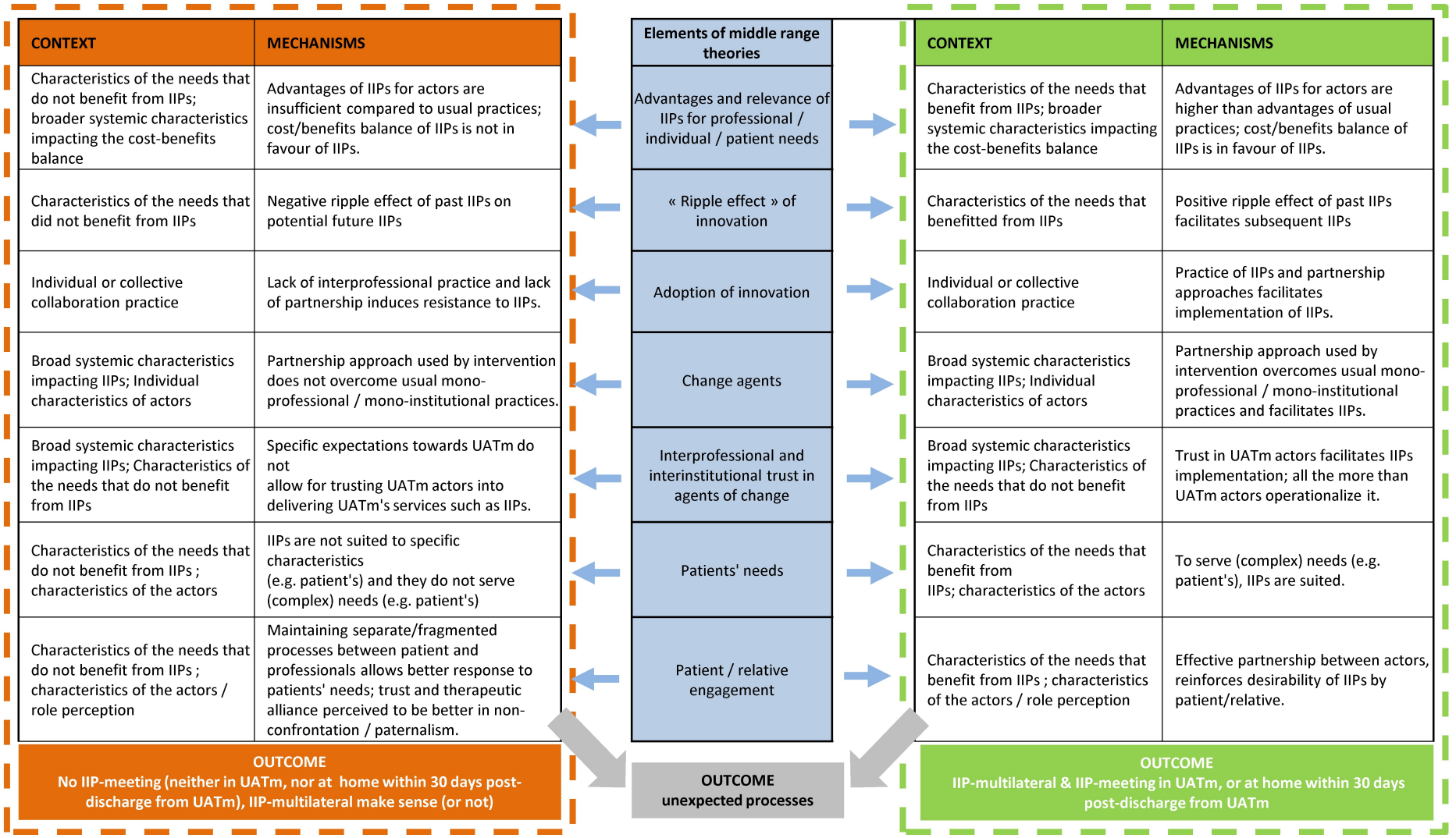
Table 18. Wrapping up middle range theories into an initial intervention theory

(In **bold**, elements from the middle range theories described previously.)

Conditions under which negative implications of the innovation (=IIPs) could be outbalanced by positive implications	**Initial intervention theory**
A **change agent** (=UATm nurse coordinator) takes over some of the **negative implications** (negotiation and organisation of IIPs).	A stay in the UATm, with in-patient professionals committed to facilitating IIPs, will reinforce the implementation of IIPs, especially for patients with CN.
A **change agent** (=UATm nurse coordinator) with an adapted and agile **professional & interpersonal approach gathers and valorises** out-patient **actors' perspectives** individually (=IIPs multilateral) and collectively (=IIPs-meetings).	
In an acute phase (=UATm stay) within a context of CN, the desirability of (new) **collaborative solutions** (=IIPs) to (old) **needs** is increased.	
The assessment of (old) needs are holistic enough (=UATm CN assessment) to bring (new) solutions to **professionals' needs** (e.g. improving care, improving recognition, improving communication & trust, reducing necessary energy & anxiety), as well as to **patients' needs** (e.g. improving health, reducing anxiety).	
Previous IIPs have had **positive implications**.	
In a **specific context** (=UATm stay) where **broader** financial and interinstitutional barriers are dealt with.	

After that, CMOs were first developed and then turned into plain statements to be tested by the various categories of actors. Figure. 16 provides an overview of the initial CMOs.

Figure. 16. Initial intervention theory, middle range theories and CMOs



Data collection

Data were collected between October 2018 and June 2019, using individual semi-structured audio-recorded interviews consisting of two parts. Part I was descriptive and started with a prompt asking how the patient had arrived in the UATm. This facilitated the identification of the context and enabled the interviewees to recall the IIPs (or their absence). Part II gave interviewees the chance to confirm, infirm or adjust CMO-statements (129).

Population and recruitment

Interviewees were selected using a non-probabilistic sampling (138). Data collected within the previous study (see Chapter 4) were used to identify individuals eligible for the interviews (Appendix VII). Indeed, depending on whether IIPs-meetings had occurred (outcome), we sampled three groups of patients with CN. In Group 1, IIPs-meeting in UATm had occurred. In Group 2, IIPs-meeting at home had occurred within 30 days following the end of the UATm stay. In Group 3, no IIP-meeting had occurred. Patient were recruited using two additional criteria: i) patients and/or relatives able to hold a one-hour conversation in French, and ii) patients followed-up by a primary care physician with a practice in the Canton of Geneva and by a nurse from imad. For each sampled patient, we identified his primary care professionals (primary care physician (PCP), homecare nurse (HN), (Deputy) Team Leader (DTL) of these HNs).

We aimed to recruit three patients per group. For each patient who accepted to be interviewed, we contacted his PCP, HN and the latter's DTL. If the professional declined the interview, the patient remained included. Patients were no longer eligible if their out-patient professional had already been interviewed for another patient, or had already declined. This did not apply to imad's DTLs, who were only interviewed once. All nurses coordinators (n=2) and geriatricians (n=2) active at the UATm over the period under study were offered an interview.

Data analysis

Building upon the work of Gilmore et al. (130) and Punton et al. (135), the following steps were taken:

(i) Interviews were transcribed verbatim by the main author of this thesis and two experienced colleagues.

(ii) After transcription, each interview was (re)listened to by the main author: transcripts were structured into Part I, Part II, and discussions of each CMO-statement; potential new CMOs were collected.

(iii) Initial CMOs, together with CMO-statements and data from each interview structured individual Excel sheet (see example, Appendix VIII); iterative adjustments of transcripts

already analysed occurred: as the result of this retroductive process, adjusted CMOs were formulated.

(iv) Adjusted CMOs from each specific constellation of patient-PCP-HN were gathered in order to gain refined insight from their specific context.

(v) Final CMOs and demi-regularities emerged from this process.

(vi) On this basis, an adjusted intervention theory was formulated.

Because of limited resources, steps ii) to iv) were processed by the main author only, with methodological inputs from her PhD supervisor, from three experts in realist evaluation, and from an expert in qualitative methods. The adjusted CMOs and demi-regularities were then discussed between the main author and the two nurse coordinators.

5.4 Results

Interviews

Out of the 36 targeted interviewees, 32 accepted to participate: eight patients (+ relatives); 21 primary care professionals (eight HNs, seven homecare DTLs, six PCPs); and three UATm professionals (two nurse coordinators, one geriatrician). While Appendix IX details the inclusion flow, Appendix X provides an overview of all the interviewees and IIPs-outcome Groups.

Findings

This section presents refined insights into our realist research question. For each part of this question, we will first textually describe demi-regularities by detailing CMOs, which will include Context (C), Mechanisms – consisting of Resources (Res) and Reasoning (Rea) interactions – and Outcomes (O) (see definitions in Table 17). Then we will illustrate demi-regularities with quotations from interviewees (see page 6 for acronyms and abbreviations).

For whom should IIPs-meeting be implemented?

Interviewees highlighted various CN, such as patient's personality or pathologies, multiple professionals, lack of interprofessional communication or lack of common goal (C).

> *There is complexity at the level of the personality of the clients, or at the level of the pathologies. (HN)*
> *[There are] complex situations where goals are not achieved, where there is a need for a clearer position from the physician, or [...] to see what the common goal is. (DTL)*

IIPs-meeting were relevant (Rea) for CN. However, characteristics of "(in)stability" (C) seemed to impact this relevance.

There can be complex situations with stable states, [which] don't necessarily require an IIP-meeting. (HN)
When the situation is complex and unstable [...] we really need to be able to discuss and move forward. (DTL)

For whom have IIPs-meeting been implemented in the UATm?

Some primary care actors acknowledged CN (C), and wanted to adapt their follow-up (Rea). An IIPs-meeting during a UATm stay (O) was implemented because of a combination of right place (Res), right moment (C) and adequate process (Res) to collectively identify new solutions (Rea) to CN (C).

The goal [of the UATm stay] was to get all the stakeholders around the table with the patient to see what can be done to improve the situation and to make it possible for [the patient] to stay at home, since that is clearly what [the patient] wants. (PCP)

Some IIPs-meeting in the UATm occurred (O) without having been planned before the UATm-stay. However, such IIPs were considered the right processes because shared decision making (Res) could help choose among various care options, or help disclose elements that were not clearly understood (Rea).

We had difficulties with [keeping the patient at home]. It was obvious to us that he couldn't come back home. So the IIP-meeting was done [in the UATm]. (DTL)
There are several reasons for IIPs-meeting: [...when] there is a disagreement on the project [...], when there is a radical redefinition of the level of care, [and by] repeated failures, when patients go back and forth, and you don't understand why. (UATm geriatrician)

Whereas the previous quotations related to healthcare needs (e.g. cognitive decline, risks of fall) (C), IIPs-meeting in the UATm could also be implemented (O) to improve interprofessional collaboration (Rea) between primary care actors thanks to the UATm stay and the nurse coordinator's role (Res).

It was complicated. The spouse spoke a lot in place of the patient [...]. And the physician, I could never get hold of. It was hard to make sense of it all. I talked about it with the nurse coordinator and I think he helped because he had the contacts and he had all those people at the same time. After that [IIP-meeting], things at home were more fluid. (HN)

Conciliating the patient's needs and priorities with ambulatory follow-up (C) might present a burden, even a risk. IIPs meetings could thus also make sense as cathartic moments (Rea), where some actors could express their concerns and others could hear them. Sharing these elements during an IIP-meeting (O), under the impulse of the UATm staff (Res), made it possible to overcome the perceived incompatibilities (e.g. incompatibility between the patient's will and the risks considered by professionals) (Rea).

We had to create a specific situation and we would have to stick to it. [...] The meeting occurred thanks to [the nurse coordinator]. [...] [The patient's follow-up] could go badly wrong. But at least we could say that we were concerned, and [the IIP-meeting] enabled us to relax as well. (PCP)

For whom have IIPs-meeting been implemented at home, after the UATm-stay?

For some patients with CN (C), implementing IIPs at home was considered more relevant (O) than in the UATm. This could happen when one key actor of the shared decision making process could not attend the IIPs-meeting in the UATm (Rea), or when partnership between patients and healthcare professionals could be endangered by a decision process made in his absence (C).

We knew that [the situation] was difficult, but the UATm team said: you have to [...]. But it's too complicated and then we'd get [the spouse] angry. [...] The purpose of having the meeting [at home] was [to keep] the therapeutic alliance. (PCP)

With whom have IIPs been implemented?

Patients trusted that healthcare professionals interacted with each other to discuss options and make decisions, even in the patients' absence. Processes such as IIPs-meeting gathering all relevant actors (O) were thus welcome as a starting point (Rea), but subsequent processes might not need all actors, maybe not even the patient (O).

[The IIP-meeting] was especially important to know where I was going to go. Afterwards, the discussions with each doctor separately were more than enough for me. [...]And then, they have their bilateral discussions. That makes me feel 100% reassured. (Patient)

Homecare professionals had diverging opinions on who should be part of IIPs (O). This should be understood in light of the public homecare organisation, which involves numerous nurses, among them one referring nurse, with irregular shifts, and a DTL, who is more easily reachable by phone during business hours (C).

The DTL [should be in contact with the UATm]. Because DTLs are much more available and have all the information. (DTL)
The HN regularly keeps in touch with patients who are either in the UATm or in hospital. [...] It's the difference between the HN, who really knows the situation, the environment, and all the other problems that can revolve around it, and my position [as DTL]. (DTL)

Sometimes, depending on the topics to be addressed in the shared decision making process, actors accepted not to be part of the IIPs-meeting (O) because they thought that their expertise was efficiently replaced by somebody else (Rea).

A couple of times I didn't go to the IIP-meeting. [...] I could have been there, but the decisions could be made, and the expertise [available at the in-patient setting] meant that I wasn't needed. (PCP)

Depending on the characteristics of the patients, for instance with patients having cognitive impairments (C), while IIPs-meeting did make sense (O), preliminary IIPs-multilateral seemed to be relevant (O) to improve the diversity of data upon which shared decisions were made (Rea).

I think [IIPs-meeting] are adapted. It is just that I think there should be parallels discussions. If you talk to my [relative], he's going to say "yes" to almost everything. His landmarks are a little bit gone. You're going to have a lot of things that aren't right. [...] That's why it's good to do it this way: [first IIPs-multilateral, then IIP-meeting]. (Relative)

In which context have IIPs-meeting been implemented (or not)?

During a UATm stay, information was gathered and needs were holistically assessed (Res), which could bring out new insights on long-term follow-up (C). Depending on how primary care actors reacted (Rea) to the UATm's insights and suggested processes (Res), IIPs occurred or not (O).

Some primary care actors acknowledged the CN (C) and indeed expected a holistic assessment from the UATm (Res). These primary care actors also recognized the possible chronicization of a long-term follow-up (C) and did not feel endangered (Rea) by an external assessment (Res). In this case, IIPs-meeting occurred in the UATm (O).

A UATm stay is a sign [...] that the situation requires some questions to be asked again. [...] Professionals in the UATm take a fresh look at the situation. [...] And they also pick up information from right and left. So they re-centralize a bit. Which I sometimes do not do spontaneously, or which [homecare] does not necessarily reorganize. [A UATm stay] might be time to maybe make an alert [...]: are we having an IIP-meeting or not? (PCP)

IIPs-meeting were considered to be irrelevant (O) in situations where actors decided not to question the follow-up (Rea). This decision seemed to rely upon a cost/benefit balance, weighing the probable reaction of involved actors, the energy required, and the potential benefits of the shared decision making processes on the CN (Rea).

Often the HN says: [...] it holds as well as it can. [...] Sometimes it is not the right time because they need a rest; they are not here for anything else. And the shared goal is: do not question. (UATm nurse coordinator)
There are situations that I've called "over": you may throw yourself into it [...] but your buoy won't work. (UATm nurse coordinator)

Throughout the interviews, it appeared that patients and caregivers considered that IIPs were part of professional practices in various settings outside the UATm (C). Thus, IIPs in general were not perceived as innovative, but IIPs with in-patient actors were.

[IIPs] were done before. [...] The UATm is a bit new, at least IIPs-meeting in the UATm. (HN)

When one of their patients stayed in the UATm, many primary care professionals drew a parallel with processes experienced with other in-patient settings (C), thus expecting reduced communication in general (O). When expecting the usual in-patient model, but experiencing a different model, primary care professionals had various reactions

Indeed, several HNs seemed to interrupt their follow-up during a UATm stay and refrain from proactively taking news (C). They were used to being set aside and to passively receive prescriptions at the end of the patients' stays (C).

Once people leave [home], we have other things to think about. I don't really check in. I figure: when they leave [the in-patient setting], we'll know anyway. (HN)

The active involvement of homecare by UATm (Res) was thus a welcome innovation (O). Indeed, it acknowledged the HNs' role as experts of the out-patient follow-up, and enabled horizontal and partnership-based communication, and shared decision making that answered both patients' and professionals' needs (Rea).

The UATm contacted [the HN] several times, to discuss setting up an IIP-meeting, to check how we saw the future. [...] She was pleasantly surprised. [...] With other [in-patient] structures, we don't have direct contact, or information asked from us, or given to us about what is being done. We rather have the kind of mister-is-being-taken-care-of-since-that-date-and-he-will-be-back-home-at-that-time-and-here-is-what-you-are-supposed-to-do. (HN)

As far as PCPs were concerned, the process of UATm actors actively involving PCPs through IIPs (Res) was not perceived as an innovation per se. The perceived innovation relied in the intensity of the PCPs' role in the UATm model, considered to be potentially different from the hospital model (C). Thus, depending on the intensity of the PCPs' role (C), the PCPs' leadership in IIPs differed (Rea). On the one hand, some PCPs continued to take care of their patients during their UATm stay (C); in that context, the resources of the UATm (Res) appeared to be normal (Rea) and IIPs were welcome (O). The simultaneous presence of PCPs and nurse coordinators in the UATm (Res) seemed to facilitate IIPs, embedding them into daily practices (Rea).

When my patients are in the UATm, I follow them; I see them practically every day. As a result, I interact with one of the two nurses [...] who also assesses their needs for a possible return home. [...] I can communicate the way I want the processes to go. In general, though, we have a fairly shared vision. [...] It really is a collaboration. (PCP)

On the other hand, some PCPs considered that the UATm geriatrician (Res) should endorse the medical role during the in-patient stay (C), thus handing their role over to the in-patient professional, the way HNs do. However, they seemed to be ambivalent about their own role during

the stay: whereas they acknowledged their lack of time and physical distance, they wanted to be part of the decision making processes (Rea).

> *The PCP must be there, as a fairly important link, but not the one who will decide [...] if the IIP-meeting should be organized. [...] we are a little more behind the scene than when the patient is at home. (PCP)*

Albeit a usual context of fragmentation, heterogeneous practices and expectations (C), previous quotations reflect positive reasoning from primary care actors towards UATm's resources. However, inducing this positive reasoning required considerable effort from the UATm (Res), which was acknowledged by primary care actors.

> *Either I go [to the UATm, or] I leave it up to [the UATm geriatrician]. It's not very codified. [...] I can come into the situation, or not. And they adapt. They make it easier for us. (PCP)*

UATm staff's perceptions of their own efforts highlighted their resilience and agility (Res) towards all kinds of reasoning from primary care actors (Rea). When being asked about the reasons for this agility and resilience, UATm staff described various elements: individual characteristics (Res), such as implication and determination, and readiness to play with the limits of their role.

> *[We] are dickheads. We have a vision of the nursing profession which is rather unusual. [...] we are particular [in] taking risks and trespassing roles. (UATm nurse coordinator)*
> *It takes a lot of adaptability from the UATm staff. [...] The UATm geriatrician should not be sensitive. He must not want to be the PCP. But he must invest enough effort, and consult with the PCP. So it requires discussion, and diplomacy. (UATm geriatrician)*

Second, organisational elements of the UATm were also highlighted as resources facilitating IIPs, such as a managerial vision and choice of agile staff (Res).

> *The managerial choice of staff [...] is important. People who work in the UATm are not there by chance. [...] a lot depends on [the management], by the impetus given to this horizontal human side. (UATm geriatrician)*

Finally, two other elements seemed to impact on the reasoning of actors towards resources. On the one hand, the proximity between the UATm and two homecare offices (Res) facilitates and strengthens direct interpersonal links, thus increasing interinstitutional collaboration at the field level, for instance to serve respective professional needs (Rea).

> *We make things easier on both sides because we know each other. [...] And I think we're privileged because of our geographical [proximity] to the UATm. (DTL)*

Unexpected results

Our intervention postulated that IIPs could be welcomed because of the shared decision making process itself. However, some of the interviewees highlighted issues about their implementation.

The following quote highlighted the irritation induced by discrepancies between the decisions made and their implementation.

> *"I don't mind [IIPs-meeting]. [...] Sometimes, I wish things were more concrete, things were applied. In fact, every time [my relative] comes home from somewhere, suggested things are never put in place. [...] We are being listened to. But afterwards, they do as they want. And that's what bothers me." Relative*

From our results, shortcomings in implementation of decisions made during IIPs-meeting seemed to have no negative ripple effects on the implementation of further IIPs.

5.5 Discussion

The aim of this realist evaluation was to better understand for whom, with whom, in which context and how IIPs-meetings had been implemented (or not).

The results show that the implementation of IIPs made sense, especially for patients with CN. However, CN, perceived as either acute or chronic, impacted the implementation of IIPs-meeting. Indeed, the latter were legitimated and widely implemented when actors considered CN to undergo acute changes, such as instability in the patient's health or major readjustments in homecare. On the other hand, when actors considered CN to be chronic, the implementation of IIPs-meeting was more heterogeneous. Indeed, IIPs-meetings were welcome when actors felt uneasy with chronicization, and they legitimated re-discussing care with UATm professionals. On the contrary, IIPs-meeting made no sense when actors had found a balance in chronicization. In general, all actors were considered to have a role in IIPs. However, depending on the perception, available time, and potential impact of the decisions, actors were not included in IIPs, or did not attend IIPs, or were part of IIPs-multilateral and not of IIPs-meeting. Results also showed that innovation did not lie in the introduction of IIPs-meeting themselves. In fact, innovation seemed to lie in the new legitimation of in-patient professionals to question the care and the collaboration between the primary care actors, and to implement IIPs-meeting as ways of finding a new collective balance.

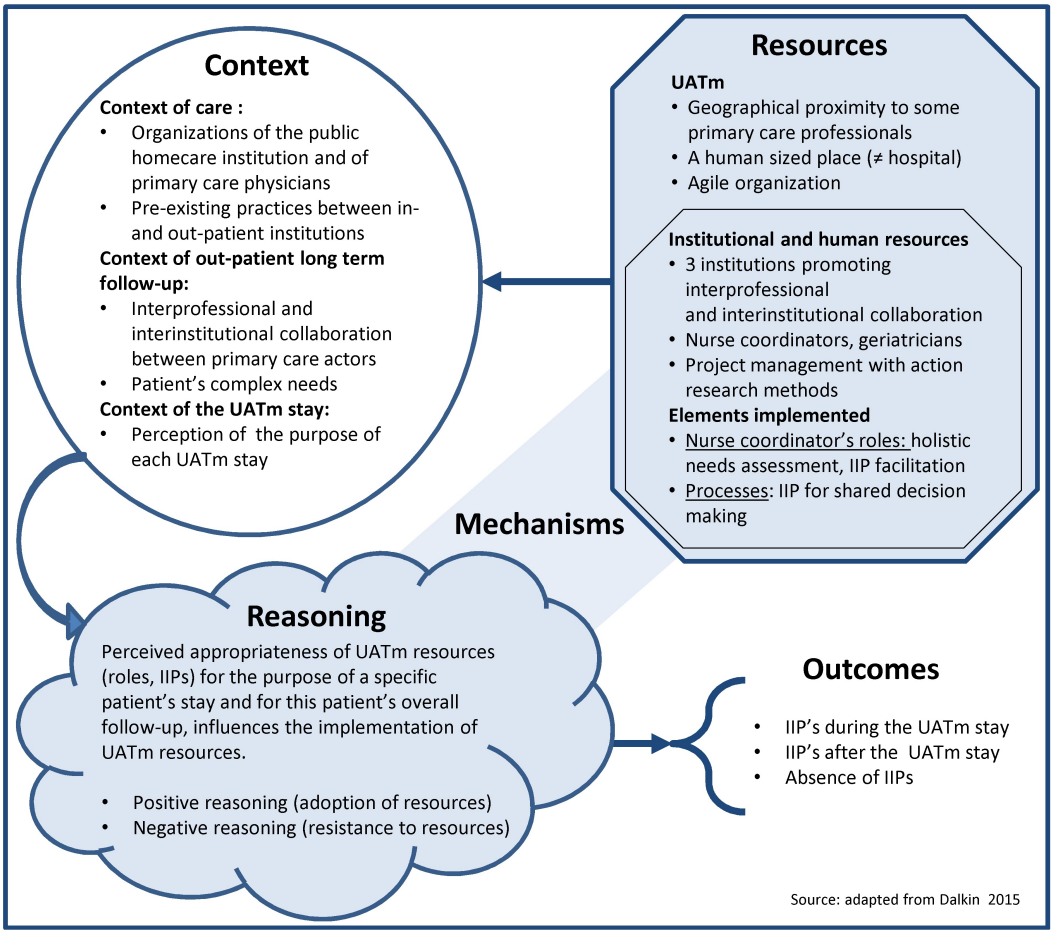
Refined intervention theory

Based on these results we formulated a refined intervention theory:

> *A patient's UATm stay (Res), with actors committed to facilitate IIPs (Res), will reinforce the perceived appropriateness (Rea) and implementation of IIPs-meeting (O). The perception of this appropriateness will vary according to different contextual elements, such as the complexity of needs (C), the existing collaborative practices (C) and the purpose of the UATm stay (C).*

While this intervention theory is depicted in Figure. 17 - with the elements included in the realist configuration (M (Resource) + C→M (Reasoning) = O)) (133) - details are discussed in the following sections.

Figure. 17. Realist intervention theory



Resources

Initially, three resources for the intervention were identified: i) the interinstitutional nature of the intervention, ii) the change management approach, iii) the new position of UATm nurse coordinator delivering specific services (i.e. needs assessment and facilitation of IIPs). However, two other elements linked to the UATm itself emerged in the adjusted CMOs. First, the location of the UATm within *Cité générations*, which hosts both in- and out-patient services: on the one hand

it enabled physical proximity, on the other hand it facilitated mutual acquaintanceship. Second, the managerial vision behind the UATm: on the one hand, the UATm professionals were considered especially innovative and diplomatic in responding to the heterogeneity of CN; on the other hand, the small size of the UATm and its configuration were considered to increase interpersonal and interprofessional relationships and trust. These two resources resonate with important dimensions of interprofessional and interinstitutional collaboration(30,31,33): mutual acquaintanceship and trust, local leadership, interconnections between individuals and institutions, support for innovation and role flexibility.

Context

The context of our intervention theory was organized in three categories:

- **The global context of care**, with systemic elements such as fragmented financing, institutions and practices. These elements favour a division of tasks between the actors and hinders IIPs (202,328,349). This was very much assimilated by primary care actors and transposed to the UATm, as if the latter were a hospital. As a result, the primary care actors tended to step back during a UATm stay, which increased the energy spent by UATm professionals to reach out for primary care actors and to implement IIPs.
- **The challenges of primary care follow-up**: when facing chronicity and its possible burden in terms of duration, workload and management of failure (360–363), the responses given by the actors (e.g. questioning care, changing care plans) were heterogeneous and required adaptability from the UATm professionals.
- **The purpose of a specific UATm stay**: as part of this long-term out-patient follow-up, a UATm stay was perceived either as a parenthesis, more or less disconnected from the overall follow-up, or as a transition within the overall follow-up. This influenced what primary care actors expected from the UATm stay, thus making IIPs-meeting relevant or not.

Reasoning

Reasoning (see definition in Table 17) was formulated as follows: the perceived appropriateness of UATm resources for the purpose of a specific patient's stay and for this patient's overall follow-up, influences the implementation of these UATm resources. That is, if the UATm resources were perceived as inappropriate, actors resisted them, and IIPs-meetings were not implemented. If the resources were perceived as appropriate, actors adopted IIPs (e.g. IIP-meeting in the UATm) or adjusted them (e.g. IIP-meeting at home).

Implications of these findings

Suggestions for the UATm

After three years of implementation, this evaluation showed that IIPs could be implemented within specific CMO configurations, including specific resources. The sustainability of this implementation will be challenging as well. For this sustainability, one main issue can be highlighted: the future of the UATm nurse coordinator. Indeed, the two UATm nurse coordinators described themselves as very motivated, and such psychological characteristics are needed in innovation diffusion (37). Whether other personalities would be needed to make the UATm innovation sustainable is unclear. Other challenges could include formalized knowledge transmission between present and future UATm nurses. However, this will only be relevant if the UATm nurse coordinator's position is further financed when the pilot intervention is over. For this specific purpose, models have been suggested, in line with new paths identified by the federal strategy for pilot projects in healthcare (364).

Suggestions for homecare

Interviewees from the Geneva public Institution for Homecare and Assistance (imad) expressed various opinions about the relevance of IIPs with the UATm. This can be explained by several contextual elements: i) diverse "task relevance (37)" of IIPs for patients with and without (perceived) complex needs; ii) the "feasibility (37)" of IIPs, induced by the physical distance between many homecare teams' office and the UATm; iii) the "differentiation (33)" between in-patient and homecare structures; vi) the collaboration with the UATm heterogeneously assigned to the HN or to the DTL. To overcome these elements, stakeholders' perspectives could help identify relevant approaches, such as: i) proactive and targeted information about the specificities of the UATm resources for transitional processes, ii) clarification of respective roles and professional needs (37) of HN and DTL during an in-patient stay.

Suggestions for potential new short-term in-patient care units

If new short-term medical units are to be created, or if existing units want to improve their IIPs, they should consider the following elements. First, they should build agile projects and choose professionals with acknowledged readiness for uncertainties and ability to innovate (37). Second, they should build small units, so as to keep the "human size" that was highlighted by many respondents. Third, in order to facilitate mutual acquaintanceship and interpersonal contacts, new units should be implemented close to primary care actors' offices. In that sense, new medical homes promoted in the Canton of Geneva (365) could offer suitable settings. Finally, primary care is a challenge (360–363) which needs new models of care (256). Promoting interprofessional teamwork and reorganizing primary care to limit the catchment areas will increase the number of

patients taken care of by the same professionals (e.g. PCP, HN). This could increase mutual acquaintanceship and trust (31), and reduce the "fragility and volatility" of interprofessional collaboration (33). Community-oriented models developed abroad (366,367) and in Switzerland (368) could be inspiring.

Strengths and limitations

This study has three main strengths. First, the sampling of interviewees helped us gain deeper insight into our research question by targeting groups of primary care actors related to three different outcomes. Second, the use of a previous quantitative evaluation helped us identify relevant interviewees based on these outcomes. Third, the fact that three of the authors of this evaluation also led the implementation. Whereas this may be considered a limitation in summative evaluations, it did make sense in our context and help us gain ontological depth into our evaluation.

The following limitations must be considered while interpreting our study results. Realist data analysis is often handled by a group of researchers (136). In the absence of such resources, the main author improved the quality of the analyses through iterative procedures (i.e. pre-analyses after each interview, individual and grouped analyses of CMOs). To further improve the refined CMOs and intervention theory, and to use these results to adjust the intervention, several workshops with different stakeholders in the Canton of Geneva will take place after the completion of this thesis.

5.6 Conclusions

This realist evaluation of the implementation of transitional interprofessional and interinstitutional processes showed their value in answering the complexity of patients' needs but, more broadly, in strengthening interprofessional and interinstitutional collaboration. Since IIPs occurred within a general context of fragmentation and heterogeneity of practices, sustained efforts from actors implementing them, as well as from organisation s supporting them were necessary.

Supplementary material

Additional files for this chapter are available under www.zenodo.org, Nr 3736215:

- Interviews canvas (patients, homecare nurses, primary care physicians, UATm nurse coordinators, UATm geriatricians) (original French versions)

Authors' contributions

SSF, with inputs from IPB, GM and SM, designed the study. SSF collected all the data, with methodological inputs from IG. SSF and two colleagues transcribed the data. SSF analysed the data. SSF prepared the manuscript, with precious inputs from IPB and IG.

6. General conclusion

The aim of this thesis was to extend knowledge of care integration in Switzerland, more specifically in the areas of interprofessionality and interinstitutionality, with the aim to support their development. For this purpose, we conducted four studies (Chapters 2, 3, 4, and 5). This last chapter will wrap these elements up in a general conclusion, which will provide the readers with a summary of the studies, with targeted recommendations and broader suggestions.

6.1 Summary of the four studies and targeted recommendations

Integrated care in Switzerland: results from the first nationwide survey (Chapter 2)

The first study sought to identify integrated care (IC) initiatives in Switzerland and to specify their characteristics. To this end, we conducted a cross-sectional study throughout the country between 2015 and 2016. We used an online survey to collect self reported data on various elements of IC initiatives (e.g. context, targets, components, professionals and levels involved, obstacles and facilitators to implementation, evaluation). Notwithstanding the limitations due to self-reported data and the use of an operational definition for "integrated care", the analyses revealed an important (n=155) and increasing number of IC initiatives over the last 25 years. Analyses also showed the heterogeneity of existing initiatives. Additionally, they also revealed various perceived obstacles to IC, such as interinstitutional and financial barriers.

These results are congruent with research highlighting the diversity of IC (11,211,311,369). Because of tendency to fragmentation - ranging from cultural to geographic, from political to demographic – Switzerland is probably bound to implement contextualized models of integrated care. In this sense, the diversity of initiatives captured by our study is good news. This means that, notwithstanding the limited political and administrative support for integrated care at the time of the survey, there had been a trend towards increased IC. This should not support inaction. On the contrary, this should prompt agile policies, which will further support this diversity, while removing obstacles to IC.

Financial barriers decrease the benefits of interprofessional collaboration within integrated care programs: results of a nationwide survey (Chapter 3)

Building upon the analyses and data of the previous study, the second study explored the influence of the organisation and funding of care on the implementation of interprofessional collaboration (IPC). While caution is needed when interpreting the results of our moderated mediation analyses of perceptions and self-reported data, this study suggests that IPC implementation within IC

initiatives leads to organisational improvements, which then benefit patient care. Additionally, it shows that financial barriers interfere with that process.

These results should encourage IC stakeholders to prioritize organisational improvements, in addition to targeting patient care improvements. Furthermore, the role of financial barriers in the development of IC should be further acknowledged and actions taken to reduce them. These elements are in line with recommendations supporting systemic IC interventions. To this end, solutions are yet to be found, especially because of the Swiss health system's numerous and entangled funding schemes. However, the increasingly acknowledged inadequacy of these schemes for IC (202,263,309,370), as well as political will to flexibilise these schemes for pilot projects (364), give hope for change.

Interprofessional & interinstitutional transitional processes for complex needs patients: an implementation study (Chapter 4)

In the third study, we evaluated the implementation of a pilot IC intervention conducted in the Canton of Geneva. This intervention aimed to formalise transitional interprofessional and interinstitutional shared decision making processes (IIPs) between out-patient care providers and a short-term in-patient structure (UATm, see Section 1.4). In addition to IIPs, this intervention encompassed multiple components, such as new clinical activities (holistic assessment of patients to identify patients with/without complex needs, formalized transitional care plan), adjustment of resources (funding for the intervention, durable funding of IIPs), and the introduction of a nurse coordinator position. This intervention used action research and change management methods.

Between 2017 and 2019, we conducted an 18-months feasibility study, using coverage and fidelity indicators. Results showed that IIPs had been implemented for the majority of the 453 patients staying at the UATm, but mainly through multilateral IIPs, and in a higher proportion for patients with complex needs. Other indicators showed that we had managed to include the targeted patients and healthcare professionals, that funding for salaries and project management had been secured, and that the UATm nurse coordinator position had been held throughout the period. The main limits of this study were due to the use of operational definitions for both patients with complex needs (CN), and for IIPs.

Implementation of an innovative intervention targeting IIPs in a short-term medical unit appeared to be feasible. However, in the absence of baseline measures, and with limited published quantitative research on transitional processes, we found it difficult to interpret some of our feasibility results. Could / should higher percentage of IIPs be expected? For patients with complex needs only? Should primary care actors always be involved? Accordingly, the results of this

evaluation should promote research on IIPs implementation to better understand their feasibility for various categories of patients, for various types of professionals, and in various contexts. Furthermore, while research on transitional improvements has rightly focused on patient care outcomes or on professional's satisfaction, organisational outcomes should be further targeted. Indeed, action on patients and on the transition itself is necessary, but not sufficient because we probably also need to strengthen the team with and around the patients in the long term. Investigations could include which and how interprofessional and interinstitutional transitional processes (could) impact out-patient actors' collaboration.

Realist evaluation of a pilot intervention implementing interprofessional & interinstitutional shared decision making processes for transitional care (Chapter 5)

The fourth study further evaluated the pilot intervention previously described, by exploring for which patients, with whom, in what context and how IIPs had been implemented. To this end, between 2018 à 2019, we conducted a realistic evaluation, which is a methodology initially developed in the late 90's, still being adjusted by experts, and only emerging in Switzerland. Realist evaluation is theory driven, and relies on the idea of generative causality (i.e. mechanisms trigger outcomes in specific contexts).

We collected data through 32 individual interviews with UATm patients and professionals from both the in-patient setting (UATm) and the patients' out-patient structures (primary care physicians, homecare nurses, and their immediate hierarchy). Results showed the value of IIPs not only in addressing the complexity of patients' needs but, more broadly, in strengthening interprofessional and interinstitutional collaboration.

This study's main limitation is linked to realist evaluation (RE). Indeed, in addition to its evolving theorization, the operationalization of RE remains a challenge. However, we are confident that recommendations for transitional structures can be drawn from our results, such as: i) agile actors and clinical services that can be adjusted to the needs of the target populations, thus facilitating the diffusion of innovation; ii) proactive and targeted information about the specificities of the UATm resources for transitional processes, compared to usual in-patient settings; iii) small-scale units and limited catchment areas to facilitate mutual acquaintanceship and interpersonal contacts. In any case, such recommendations should be discussed with stakeholders and adjusted to their context.

6.2 Broader suggestions and recommendations

Upon these results, we think that lessons learned from these studies should be disseminated, financial issues addressed, and evaluation competencies improved. The following section suggests several paths.

Following our description and implementation of existing Swiss integrated care initiatives, the next steps should disseminate the lessons learned from them. These dissemination processes should be participative, so helping stakeholders grasp the contextual specificities of the initiatives and adjust the components and lessons learned to their own context. For this purpose, analytical frameworks could help stakeholders identify and understand systemic obstacles and facilitators. While several frameworks have been developed abroad for various purposes (e.g. evaluation (371), knowledge transfer and learning (372)), one of them is formally being explored in the Swiss context (373), and other works have gathered options and models intended to trigger stakeholders into integrated care (308,374). Regarding implementation itself, following Alla et al. (100,105), we would support knowledge transfer approaches, gathering field and research-experts, thus also implementing interprofessional and interinstitutional partnership concepts at the intervention level. However, supporting bottom-up approaches (375) within top-down hierarchical organisations will require some change management (376).

As long as financing obstacles have not been removed, IIPs will not be widely disseminated. This is true for both implementation and maintenance stages. While resources for pilot projects might be available from federal funds (364), further federal and cantonal support for IC implementation should also be developed (308), for example following existing trends (236,377). In the longer term, new financing schemes, such as bundled or pay-for-performance payments (263,370,378), and monistic models (309), might incentivize interprofessional and interinstitutional transitional processes (202,263). However, this will need medico-economic investigations (379,380). To this end, we need to improve the indicators that we have used in our studies:

- Indicators for IIPs should be elaborated; they should describe more precisely their characteristics and their outcomes; for this purpose, lessons from local field practices (381,382), as well as existing models (23,203,383) could be helpful;
- Indicators for complex needs should be developed; for this purpose, models developed in Geneva (332,384) and abroad (59,64,385,386) could be used.

Finally, while the use of both positivist and realist methodologies helped us gain deeper insight into our intervention, the operationalization of the latter turned out to be a challenge. This is due to both the evolving realist approach, which produces heterogeneous international research, and to

only emerging competences in this field in Switzerland. While Belgian experts have recently added a welcome French-speaking contribution to the pragmatic use of realist evaluation (RE) (387), local resources for both academic and field experts should be available to help use RE more consistently. Tools, courses and further use could very much contribute to a better understanding of the "black box" of integrated care (388).

6.3 Conclusion

The results of this thesis did extend the knowledge of care integration in Switzerland. We took an extensive picture of the number and types of initiatives existing in the country. We grasped the upwards trend in the implementation of new initiatives. We showed the feasibility of transitional interprofessional and interinstitutional processes, highlighting their value not only in addressing the complexity of patients' needs but, more broadly, in strengthening interprofessional and interinstitutional collaboration. However, we also learned that these encouraging elements are mitigated by financial barriers interfering with the implementation of interprofessional collaboration, and by contextual leadership and change management influencing innovation.

On this basis, we suggest stakeholders to develop financing models facilitating care integration, to encourage the diversity of care integration initiatives, and to support flexible and local change management approaches for their implementation. This will ensure that future initiatives are tailored to the local particularities of our country (369). It will probably strengthen innovative individuals and organisations, thus facilitating the emergence of care integration in favourable contexts; and it will contribute to the sustainability of care integration in Switzerland.

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8. Appendices

Appendix I. Detailed dissemination of results linked to this thesis

(Status as of Mai 2020)

Scientific publications

- Submitted: Schusselé Filliettaz, Séverine, Stéphane Moiroux, Gregory Marchand, Ingrid Gilles & Isabelle Peytremann-Bridevaux. 'Interprofessional & Interinstitutional Transitional Processes for Complex Needs Patients: An Implementation Study'. (Submitted to the Scandinavian journal of caring sciences, March 2020).
- Gilles, Ingrid, Séverine Schusselé Filliettaz, Peter Berchtold, & Isabelle Peytremann-Bridevaux. 'Financial Barriers Decrease the Benefits of Interprofessional Collaboration within Integrated Care Programs: Results of a Nationwide Survey'. *Int.J.Integr.Care* 1, no. 10 (2020): 1–9. doi.org/10.5334/ijic.4649.
- Schusselé Filliettaz, Séverine, Peter Berchtold, Dimitri Kohler, & Isabelle Peytremann-Bridevaux. 'Integrated Care in Switzerland: Results from the First Nationwide Survey'. *Health Policy* 122, no. 6 (2018): 568–76. doi.org/10.1016/j.healthpol.2018.03.006.

Other publications

- Accepted, 2020: Schusselé Filliettaz, Séverine, Peter Berchtold & Isabelle Peytremann-Bridevaux. 'Switzerland'. In Handbook Integrated Care, edited by Volker Amelung, Viktoria Stein, Nicholas Goodwin, Ran Balicer, Ellen Nolte & Esther Suter, 2nd ed. Cham (Switzerland): Springer. (*Ongoing editorial process at the publication of this manuscript*)
- Schusselé Filliettaz, Séverine, Peter Berchtold, Dimitri Kohler & Isabelle Peytremann-Bridevaux. 'Integrierte Versorgung in der Schweiz: Ergebnisse der ersten nationalen Erhebung'. *Schweizerische Ärztezeitung*, no. 21–22 (24 Mai 2017): 685–86.
- Schusselé Filliettaz, Séverine, Dimitri Kohler, Peter Berchtold & Isabelle Peytremann-Bridevaux. 'Soins intégrés en Suisse : résultats de la 1re enquête (2015 – 2016)'. Dossier Obsan. Neuchâtel (Suisse): Observatoire suisse de la santé (Obsan), 24 avril 2017. www.obsan.ch
- Schusselé Filliettaz, Séverine, Stéphane Moiroux, Gregory Marchand & Lucile Battaglia. 'UATm: de T comme temporaire à T comme transition [UATm: from T as Temporary to T as Transition]'. *Soins Infirmiers*, no. 10 (2017): 53–55. www.sbk-asi.ch & www.prism-ge.ch

Interventions in university courses

- Schusselé Filliettaz, Séverine. 'Einführung in die Thematik «Integrierte Versorgung»: Beispiele aus & Herausforderungen in der Schweiz'. Cours donné dans le cadre du Module « Innovative Versorgungsformen, MAS Public Health », Universität Zürich, Août 2018 et 2017, www.weiterbildung.uzh.ch

Presentations in conferences & workshops

- Gilles, Ingrid, Séverine Schusselé Filliettaz, Peter Berchtold & Isabelle Peytremann-Bridevaux. 'Perceived Financial Barriers Decrease the Benefits of Interprofessional Collaboration within Integrated Care (IC) Programs: Results of a Nationwide Survey'. Oral presentation at the ICIC19 – 19th International Conference on Integrated Care, San Sebastian, Basque Country, April 2019. https://integratedcarefoundation.org.
- Schusselé Filliettaz, Séverine, Peter Berchtold, Dimitri Kohler & Isabelle Peytremann-Bridevaux. 'Soins intégrés en Suisse: résultats de la 1ère enquête (2015-2016)'. Présentation orale lors des Ateliers de l'OBSAN, Berne, Suisse, 22 juin 2018. www.obsan.ch.
- Schusselé Filliettaz, Séverine, Peter Berchtold, Dimitri Kohler & Isabelle Peytremann-Bridevaux. 'Comprehensive View of Integrated Care in Switzerland: Results of the 1st Swiss Survey on Integrated Care'. Oral poster presentation, International Conference on Integrated Care, Dublin (Ireland), May 2017. www.integratedcarefoundation.org.
- Schusselé Filliettaz, Séverine, Peter Berchtold, Dimitri Kohler, & Isabelle Peytremann-Bridevaux. « Erste Schweizer Erhebung zur Integrierten Versorgung: Ergebnisse & Analysen ». BMC Kongress 2017, Berlin (Deutschland), 25. Januar 2017. www.bmcev.de.
- Schusselé Filliettaz, Séverine, Isabelle Peytremann-Bridevaux, Monika Diebold, Dimitri Kohler & Peter Berchtold. 'Enquête Suisse sur les Soins Intégrés: Résultats préliminaires'. Présentation orale lors de la Journée de réflexion du réseau médico-social fribourgeois, Fribourg (Suisse), 15 septembre 2016. www.afipa-vfa.ch/journees-de-reflexion.
- Peytremann-Bridevaux, Isabelle, Séverine Schusselé Filliettaz, Monika Diebold, Dimitri Kohler & Peter Berchtold. 'Enquête Suisse sur les Soins Intégrés: Résultats préliminaires'. Présentation orale lors du Symposium national des soins intégrés, Berne (Suisse), 15 juin 2016. www.fmc.ch.
- Schusselé Filliettaz, Séverine, Peter Berchtold, Monika Diebold, Dimitri Kohler & Isabelle Peytremann-Bridevaux. 'Enquête Suisse sur les Soins Intégrés: Résultats préliminaires'. Présentation orale lors de la Rencontre d'information et d'échange pour les partenaires (Office fédéral de la santé publique : Amélioration des soins coordonnés pour les patients très âgés et polymorbides), Berne (Suisse), 7 juin 2016. www.bag.admin.ch.

Appendix II. Interprofessional UATm Letter (v. 02 / 2019) (Franch version only)

Cité générations
maison de santé
98 Route de Chancy
Tél: 022 709 00 38
Fax: 022 709 00 48
E-Mail: uatm@cite-generations.ch

Lettre UATm

Destinataire(s) :

Concerne : , né-e le ( )

Séjour UATm : ENTRÉE le : SORTIE le : Heure :

1. Renseignements administratifs

N°AVS :

Assurance : N° Assuré :

SPC :

État civil :

Adresse :

Étage : Code de porte :

Accessibilité du logement pour PMR :

Patient-e inscrit-e à www.MonDossierMedical.ch :

2. Séjour UATm et faits marquants

Motif d'entrée / d'hospitalisation

Mode de vie

Antécédents

Anamnèse récente

Synthèse du séjour et prise en charge des problèmes

3. Traitements

Traitements en attente de validation par le médecin

Traitements de sortie

Traitements introduits	Traitements arrêtés

4. Autres prises en charge

Douleur(s)

Plaie(s) (fréquence pst / protocole)

5. Devenir : Plan de soin Partagé

Processus interprofessionnels mis en place par:

☐ (Réunion de réseau du Participant-e-s:

☐ (Échanges multilatéraux Avec:

a)

Objectif partagé :
Actions :

b)

Objectif partagé :
Actions :

c)

Objectif partagé :
Actions :

6. Réseaux

Réseau primaire / curateur *Informé de la sortie et de l'évolution :*

Absence / Fragilité du réseau primaire : ☐ (

Réseau interprofessionnel *Statut* *Informé de la sortie et de l'évolution :*

Médecin traitant :

Autre(s) spécialiste(s) :

Soins à dom :

NB : Fréquence des passages :
Date / heure du 1er passage :

7. Autonomie

AVQ et AIVQ

Boire		Marcher	
Manger		Se coucher/Se lever	
Faire sa toilette		Faire des courses	
Prendre une douche		Faire son ménage	
S'habiller		Cuisiner	

S'asseoir/Se lever | Monter les escaliers
Commentaires :

Audition : | Remarques :
Vision : | Remarques :
Parole | Remarques :
Continence urinaire : | Moyen de protection :
Continence fécale : | Problème de transit :
Moyen auxiliaire à disposition :
Moyen auxiliaire à prévoir :

Etat psychique et relation observée

☐ Normale ☐ Déni ☐ Colère ☐ Anxiété
☐ Dépression ☐ Conflit familial ☐ Syndrome de glissement
☐ Désorientation spatio-temporelle
Commentaires éventuels :

8. Annexes jointes

☐ Photocopie de l'ordonnance signée ☐ Photocopie carnet de Sintrom
☐ Bons : ☐ Rdv :
☐ Liste des examens (imagerie et biologie, comptes-rendus en annexe) : ☐ Autre :
☐ Directives anticipées

Rédigé à Onex, le
Médecin UATm : Soignant-e UATm :

NB : le présent document est transmis à ses destinataires en conformité avec l'Art. 12 de la Loi sur le réseau de soins et l'accord oral du/de la patient-e (https://www.ge.ch/legislation/rsg/f/rsg_k1_06.html)

Appendix III. Job description of the UATm nurse coordinator (French version only)

Arsanté
ORGANISATION EN SOINS

Cahier des charges
Infirmier coordinateur UATm (v. 12 / 2017)

Compétences	• Habilité technique et relationnelle et connaissances des limites de son actions. • Etre la porte d'entrée du système de santé pour les personnes complexes • Capacité de leadership • Connaissance des acteurs, des réseaux, des politiques de santé et des systèmes d'informations. • Médiation, capacité d'adaptation, flexibilité, proactivité, coopération
Activités	• Evaluation globale : de la situation somatique, de la santé mentale, des solutions matérielles, des possibilités financières, du réseau primaire et secondaire des situations complexes. • Détection situations complexes. • Recueil de la volonté du patient, identification des besoins en collaboration avec le réseau. • Analyse opérationnelle => Coordination clinique (ASSC, Médecin UATm, Médecin traitant, …) => Anticipation et priorisation des actions • Coordination fonctionnelle, organisation réunion de réseau, prise de décision, définition d'objectifs communs, co-élaboration des plans de soins, attribution et suivi des tâches. • Décloisonnement, promotion des échanges et des nouvelles solutions techniques pour cela.

Arsanté
ORGANISATION EN SOINS

	• Fonction éducative auprès des bénéficiaires et des aidants. • Soutien des aidants • Validation du flux entrée/sortie au regard des missions et des capacités. • Garantir la traçabilité du processus • Soutien et ressource opérationnelle pour l'équipe de l'UATm • Participation à la gestion, réflexion et intégration de la fonction de coordination dans le système de santé actuel. • Présentation, représentation et communication autour du projet au cours de divers évènements publics ou lors d'échange avec les professionnels du réseau de soins. • Etudes, recherches et développement dans le domaine de l'interprofessionnalité. • Fournir des évaluations et des statistiques sur les suivis. • Etre en relation avec les assurances pour motivation de prolongation
Buts	• Favoriser le retour et le maintien à domicile • Renforcement de l'autonomie du patient et du réseau d'intervenants. • Favoriser la continuité des soins, fluidifier les transitions depuis et vers l'UATM. • Contribuer à la résolution des problèmes aigues.
Organisation	• Présence à l'UATm de 9h à 15h, en semaine (garde téléphonique le we) • Relation hiérarchique : Mme Tiziana Schaller, Dr Philippe Schaller

Appendix IV. Additional results to the study presented in Chapter 3

Supplementary material available online https://doi.org/10.5334/ijic.4649.s2,

Source: Gilles, Ingrid, Séverine Schusselé Filliettaz, Peter Berchtold, and Isabelle Peytremann-Bridevaux. « Financial Barriers Decrease the Benefits of Interprofessional Collaboration within Integrated Care Programs: Results of a Nationwide Survey ». *Int.J.Integr.Care* 1, n° 10 (2020): 1-9. https://doi.org/doi.org/10.5334/ijic.4649.

A. Regression coefficients of moderated mediation analysis with professional-related barriers as moderator.

	Outcome of 2-step regression analyses			
	Step 1 : Organisational improvements		Step 2 : Patient care improvements	
Predictor	B	(95%CI)	B	(95%CI)
Number of centred care services	0.10	(-0.06, 0.25)	0.22	(0.06, 0.38)
Number of professionals involved	0.04	(-0.10, 0.19)	-0.21	(-0.31, -0.11)
IPC degree	0.36	(0.15, 0.57)	-0.07	(-0.21, 0.07)
Organisational improvements	--	--	0.51	(0.37, 0.66)
Professional-related barriers	0.11	(-0.09, 0.30)	--	--
IPC degree * Professional-related barriers	-0.11	(-0.28, 0.06)	--	--
R^2 (%)	12.6		39.04	
Conditional indirect effect of IPC implementation on Care improvements due to the initiative				
	B		(95%CI)	
-1 SD below the mean	0.24		(0.10, 0.42)	
Mean	0.19		(0.08, 0.31)	
+1 SD above the mean	0.13		(-0.01, 0.25)	
Moderated mediation index (with Boot 95% CI)	-0.06 (-0.16, 0.02)			

B. Regression coefficients of moderated mediation analysis with patient-related barriers as moderator.

	Outcome of 2-step regression analyses			
	Step 1 : Organisational improvements		Step 2 : Patient care improvements	
Predictor	B	(95%CI)	B	(95%CI)
Number of centred care services	0.09	(-0.06, 0.25)	0.22	(0.06, 0.38)
Number of professionals involved	0.04	(-0.10, 0.18)	-0.21	(-0.31, -0.11)
IPC degree	0.34	(0.14, 0.55)	-0.07	(-0.21, 0.07)
Organisational improvements	--	--	0.51	(0.37, 0.66)
Patient-related barriers	0.09	(-0.10, 0.26)	--	--
IPC degree * Patient-related barriers	-0.10	(-0.27, 0.08)	--	--
R^2 (%)	12.4		39.04	
Conditional indirect effect of IPC implementation on Care improvements due to the initiative				
	B		(95%CI)	
-1 SD below the mean	0.22		(0.09, 0.39)	
Mean	0.18		(0.08, 0.30)	
+1 SD above the mean	0.13		(-0.01, 0.25)	
Moderated mediation index (with Boot 95% CI)	-0.05 (-0.15, 0.03)			

Note: Scores are standardised; IPC degree * Patient-related barriers = interaction between IPC degree and patient-related barriers.

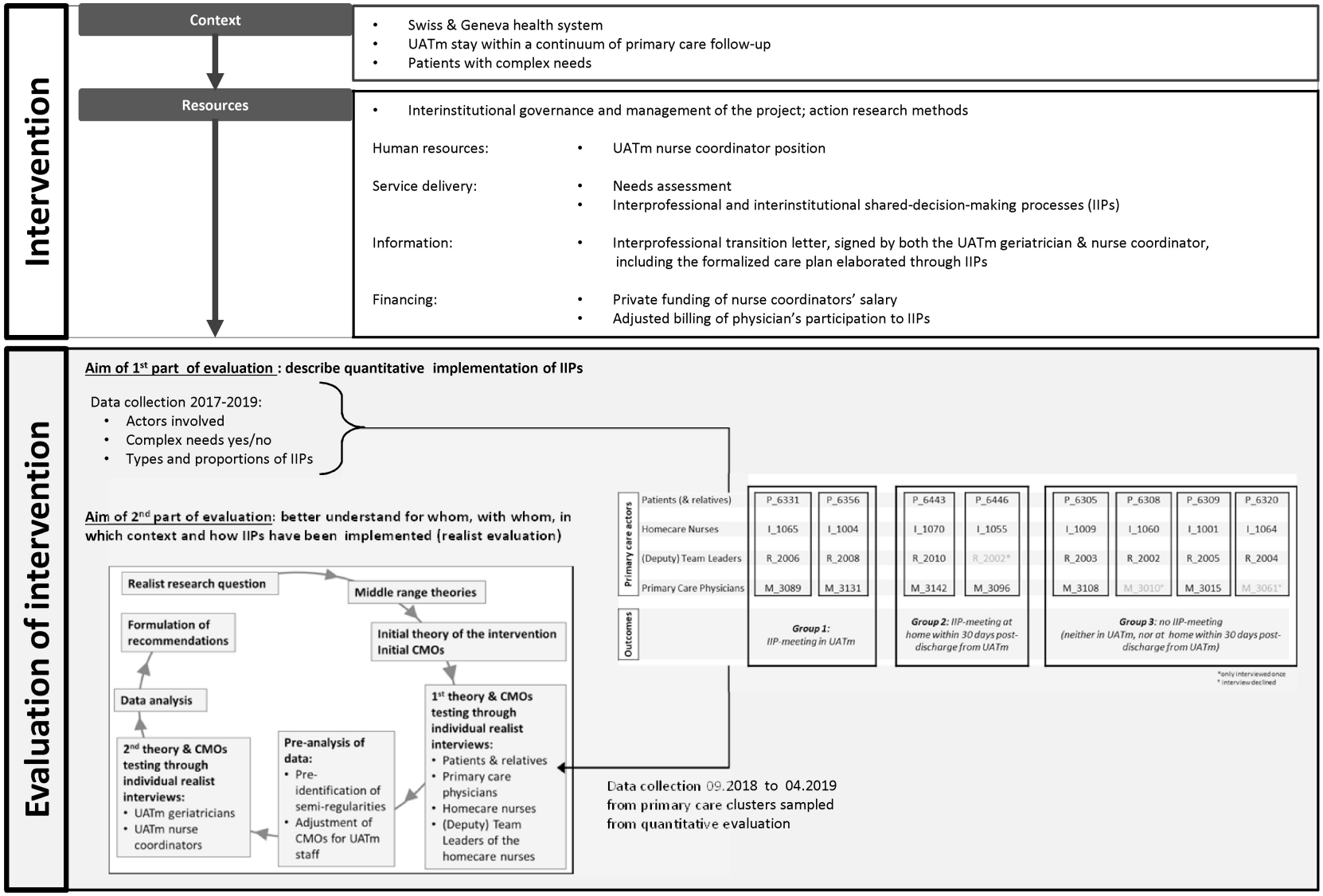
Appendix V. Data collected within the feasibility study (Chapter 4)

Variables collected to describe complex needs		
Patients' socio-demographic characteristics		
• Gender	*Man/Woman*	Administrative data
• Age (upon arrival)	*Years*	*idem*
Characteristics of stay		
• Date of arrival	*Day, month, year*	*idem*
• Length of stay	*Days*	*idem*
Characteristics of care within 30 days post-UATm (imad patient only)		
• Homecare by imad	*Yes/No*	*idem*
• Follow-up by primary care physician	*Yes/No*	*idem*
Characteristics of involved out-patient professionals		
• Public practice primary care physician	*Yes/No*	*idem*
• Private practice primary care physician	*Yes/No*	*idem*
• Public homecare organisation (if homecare follow-up effective)	*Yes/No*	*idem*
• Private homecare organisation (if homecare follow-up effective)	*Yes/No*	*idem*
Variables collected to describe complex needs		
Assessment of the complexity (according to UATm)		
• Patient with complex needs	*Yes/No*	Self-reported data
Variables collected to describe IIPs		
Characteristics of IIPs during UATm stay		
• IIPs-multilateral • Actors involved	*Yes/No* *Patient and/or caregiver ; primary care physician ; homecare ; UATm*	*idem*
• IIPs-meeting • Actors involved	*Yes/No* *Patient and/or caregiver ; primary care physician ; homecare ; UATm*	*idem*
• At least one shared goal	*Yes/No*	*idem*
Characteristics of IIPs within 30 days post-UATm (imad patient only)		
• IIPs-meeting • Actors involved	*Yes/No* *Patient and/or caregiver ; primary care physician ; homecare*	*idem*
• At least one shared goal	*Yes/No*	*idem*

Appendix VI. Anonymised examples of situations where IIPs were considered to be either relevant, irrelevant or postponed

Relevant UATm IIPs	Mr G. is an 81 years old man with Type II diabetes, mild cognitive decline, anxiety, and sleep disorders. He has been a widow for five years, and lives alone in his flat. His two children are professionally active and live two hours away. He stays at the UATm after having fallen, with significant hematomas. The question of moving Mr G to a nursing home is raised by several actors. IIPs-meeting takes place with Mr G, children, primary care physician, UATm and homecare nurses: - Mr G used to swim twice a week, but gave it up two years ago for fear of using the public transport. By giving this up, he also lost contact with his social network. Inactivity reduced his muscular mass, and worsened his sleep disorders and his diabetes. Isolation increased his anxiety as well as his cognitive decline. Tranquilisers have been added to his treatments lately. - Mr G wants to stay at home. To fulfil this priority, 1) his social interactions are increased: activities are implemented with volunteers, among which trips to the swimming pool; 2) tranquilisers are stopped to reduce the risk of fall, 3) tasks are shared between actors.
Irrelevant UATm IIPs	Mr N. is a 60 years old patient who suffers from severe cardiac failure and venous incapacity with recurring wounds. His business has gone bankrupt last year and his personal financial situation is very difficult. Recently, his spouse asked for divorce and the couple is under tension. Mr N. has an out-patient interprofessional team around him, including a primary care physician, a social assistant, a cardiologist, a dermatologist and his nurse. They meet regularly and update if necessary their shared decisions. Advanced care planning has been discussed, formalised and transmitted to the UATm. Mr N. stays a week at the UATm for intensive wound management and psychological respite, with supervision of Mr N.'s nurse, who will also coordinate the follow-up.
Postponed IIPs	Mrs F. is an 80 years old woman who lives with her 78 year old husband. She stays at the UATm for pneumonia and also suffers from Parkinson, hypertension and mild cognitive decline. Mrs F.'s spouse manages everything at home for his wife. He recently agreed to have a nurse coming home twice a week for Mrs F.'s bath, but often calls to cancel this appointment. The homecare nurse has observed a difficult dynamic between the couple. He first wanted to stabilise his therapeutic alliance with them before formally addressing the issue and sharing his analysis with the primary care physician (PCP). The pneumonia prevented him from addressing this issue. The PCP has known Mr and Mrs F for years. She introduced the homecare nurse to alleviate Mr F's increasing burden. The UATm nurse and geriatrician also noticed Mr F's exhaustion as well as his ambivalence about it. The homecare nurse said on the phone that he needed more time before sharing thoughts with Mr et Mrs F and that he did not want to endanger their therapeutic alliance. The PCP's practice is located in another part of the city and her medical assistant could not find any suitable date for the PCP to come to the UATm. The UATm geriatrician called the PCP and understood that focus of care should be the pneumonia.

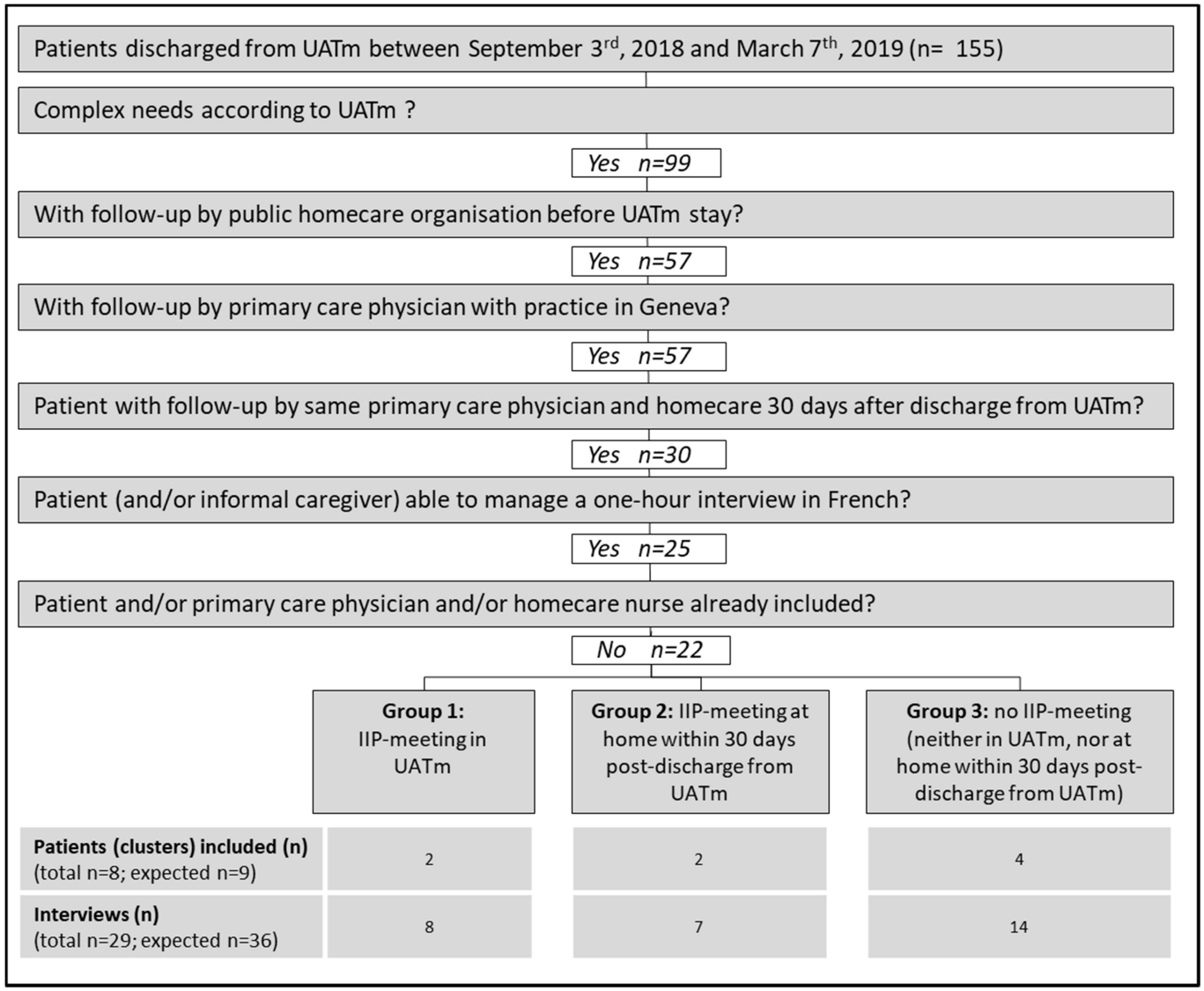
Appendix VII. Overview of the pilot intervention and of the two parts of its evaluation



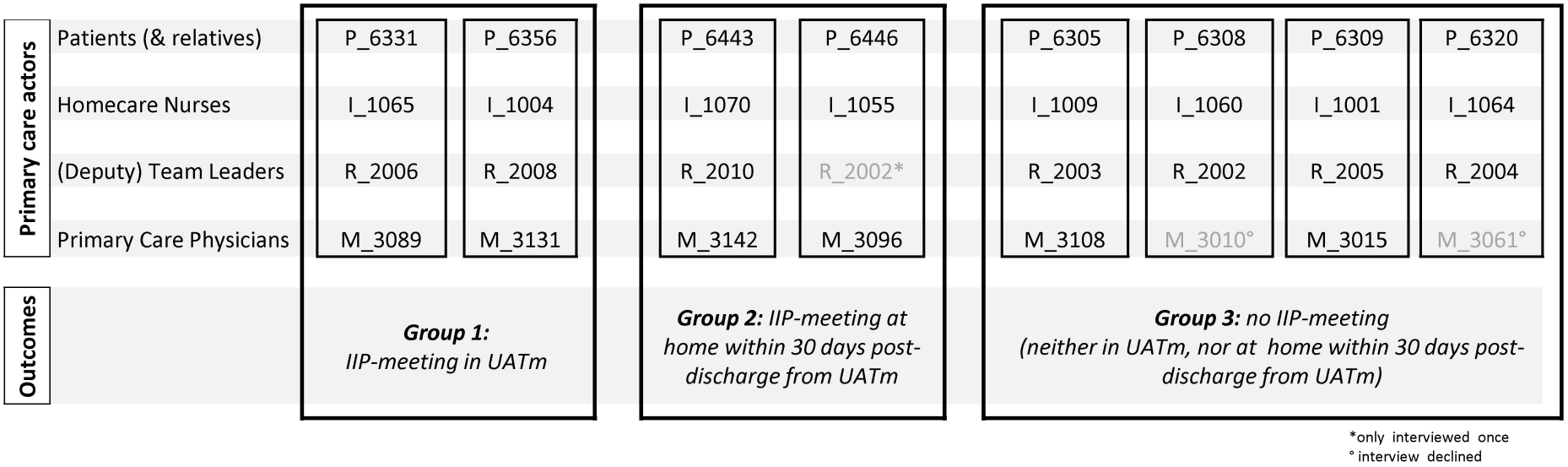
Appendix VIII. Analyses of data collected through realist interviews: example with three statements for primary care physicians from Group 1 (original French version)

Group 1 - with IIP-meeting in UATm / M_3089			
CMO-statements / *Verbatim*	**Contexts**	**Mechanisms**	**Outcomes**
Pour une situation complexe, une séance de coordination est utile : c'est un investissement assez lourd mais qui ensuite réduit ma charge de travail car je dispose d'un cadre pour la prise en charge. Cela augmente ma satisfaction et celle du patient.	**Characteristics of the needs that benefit from IIPs; broader systemic characteristics impacting the cost-benefits balance**	**Advantages of IIPs for actors are higher than advantages of usual practices; cost/benefits balance of IIPs is in favour of IIPs.**	**IIP-multilateral & IIP-meeting in UATm**
Ouais je suis tout à fait d'accord.			
Disons que ce n'est pas un réseau où on pose les choses et après moi je suis tranquille... Ca ne va pas marcher comme ça. Mais pour le long terme... toute la coordination, pas une seule séance mais le fait de travailler en... ouais en collaboration, sur le long terme, ça permet de réduire la charge de travail.		Bénéfice individuel apporté par la séance de coordination oui, mais pas uniquement. C'est plutôt la collaboration sur le long terme qui réduit charge de travail.	
En tant que médecin, je suis le chef d'orchestre / le catalyseur de la prise en charge de mon patient. Je peux communiquer la façon dont je souhaite que les processus se passent et l'UATm organise la séance de coordination pour moi.	**Broad systemic characteristics impacting IIPs; Individual characteristics of actors**	**Partnership approach used by intervention overcomes usual mono-professional / mono-institutional practices and facilitates IIPs.**	**IIP-multilateral & IIP-meeting in UATm**
s'il y a une décision finale concrète à prendre, elle va vous revenir mais... enfin je pense qu'on fonctionne vraiment en binôme, en trinôme, infirmer, médecin, ASCC enfin... je pense que- je mets pas de hiérarchie et tout le monde a le même poids, le même niveau et a des analyses en fonction de ce qu'il fait, de ce qu'il voit etc. Donc... je peux communiquer la façon dont je souhaite que les processus se passent ... dont je souhaite oui mais, en général, on a une vision assez partagée. Et puis c'est, ouais c'est vraiment une collaboration. Moi j'aime bien ce mot mais... Le chef d'orchestre, forcément ça met une hiérarchie. [Interviewer: Alors que toi tu le vois plus horizontal ?] Ouais clairement.	Caractéristiques & personnalités individuelles et relations avec les autres professions et compréhension de la répartition des rôles entre les acteurs	Partenariat ne passe pas par une approche autoritaire / hiérarchique de la part du médecin, même s'il y a une part de responsabilité médicale qui lui donne plus de poids dans la décision, les rôles sont clairs et ont le même poids en termes de valeur pour la décision.	
L'UATm est un terrain bienveillant et un moment de la prise en charge dans lequel le patient accepte d'aborder certaines questions. Il faut en profiter et formaliser les décisions : une séance de coordination est la seule manière de le faire.	**Characteristics of the needs that benefit from IIPs**	**To serve (complex) needs (e.g. patient's), IIPs are suited.**	**IIP-multilateral & IIP-meeting in UATm**
Ouais alors ça, je suis d'accord. Je ne sais pas si c'est la seule manière de le faire. Mais, en tout cas, je pense que c'est bien de le faire formellement... avec un cadre, même si après il y a tous les aspects informels qui participent mais... ouais.			
Si là, le but du séjour à l'UATm, c'est vraiment de permettre le retour à domicile avec le bon encadrement - entre guillemets - et qu'on voit ça comme ce moment thérapeutique dans ce cadre-là, ça a plus de sens pour moi de le faire ici (montre pdt UATm sur le schéma).	Caractéristiques du patient dans le sens "moment thérapeutique" dans le chemin du patient	La pertinence et le moment de formalisation dépendent de l'objectif du séjour UATm	
[...] effectivement, le fait d'avoir tous les intervenants, ça permet de... poser aussi les choses de comment concrètement c'était à domicile. Du fait que, même s'il y a ce séjour dans le petit paradis, au retour ... le domicile il ne va pas avoir changé. Et puis, on peut quand même mettre les gens en face de leur situation, même s'ils sont mieux quand ils sont là.	Caractéristiques du patient dans le sens "moment thérapeutique" dans le chemin du patient et contexte organisationnel qui permet à différents intervenants d'être accessibles.	Pas d'effet "dépassement" de la chronicité ambulatoire directement décrit, mais possibilité d'avoir tout le monde dans un contexte apaisé, permet de poser les éléments de manière factuelle; la globalité du réseau et le moment légitime la mise à plat.	

Appendix IX. **Inclusion flow for interviews with patients and primary care professionals**



Appendix X. **Non-probabilistic sampling: actors & groups according to IIPs-outcomes**



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Integrated care and interprofessional collaboration in Switzerland: global overview and local implementation

[Intégration des soins et collaboration interprofessionnelle en Suisse: état des lieux global et mise en œuvre locale]

Séverine SCHÜSSELÉ FILLIETTAZ

2020