A realist evaluation of the roles of opinion leaders in the diffusion of innovations in primary care in Florianopolis, Brazil

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Abstract

Local opinion leaders are people with credibility and influence within social groups. Therefore, they are often used as part of strategies to promote adoption of innovations in healthcare settings. Evidence from trials show that opinion leaders are an effective strategy to promote behaviour change, but the outcomes of their use are variable and unpredictable across studies. There is a need for better understanding of how and why opinion leaders work or not in different circumstances to improve the design of behaviour change interventions.

This study addressed this knowledge gap by analysing the roles of opinion leaders during the implementation of two innovations in a primary care system of Brazil. Using a realist evaluation, I developed, tested and refined programme theories about the roles of the opinion leaders. First, I developed initial theories from documents, literature review, stakeholders' consultation and my experience in the setting. Second, I tested and refined those initial theories drawing on 18 interviews with managers and practitioners and a reassessment of the literature. The three programme theories focused on how recognising opinion leaders motivates buy-in to innovations; how involving opinion leaders in implementation gives credibility to innovations; and how the practice of opinion leaders with innovations promotes adoption. The analytical framework was based on the programme theories and the Context-Mechanism-Outcome configuration. The causal processes identified in data analysis were compared to the initial theories to generate refined programme theories. The key findings across refined theories were summarised in a middle-range theory.

The findings suggested causal processes that might explain some of the variability in opinion leaders' interventions. Key mechanisms included ownership of innovations, trust, and reinforcement of group norms and modelling. Key contextual factors included interest in the innovations, similarity between opinion leader and peers, and informal relationships. The initial mobilisation of opinion leaders is a separate component of the intervention, leading to contradictory outcomes across system levels. Ultimately, there is a trade-off between harnessing the influence of opinion leaders as a resource for implementation and jeopardizing their credibility.

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Chapter 1 Introduction

1.1 Introduction

In this thesis, I will report on a study which analysed the roles of influential health professionals, hereby defined as local opinion leaders, during a change process in a Brazilian local health system. This chapter provides the background for the study. It starts by briefly outlining the problem, which is the gap between what is known and what is done in healthcare. It follows by reviewing some active strategies proposed to overcome this gap and improve health systems, which include local opinion leaders. Then, I introduce the study setting, the programme and briefly discuss the relevance of the study. Last, I state the aim, objectives and research design, and provide a reading guide for the thesis.

1.2 The problem of implementing innovations in healthcare

Despite the growing body of evidence from research on clinical and health systems interventions, health systems consistently fail to introduce innovations into routine practice (LaRocca et al., 2012). Such failure refers to under-use, incorrect use or overuse of interventions, what prejudices patient care, health outcomes, and health system costs (Berwick, 2003). Uneven uptake of research findings and inappropriate care occur across settings, specialities and countries (Eccles and Mittman, 2006). The problem is probably more severe in low and middle-income countries, because of insufficient resources and access to healthcare which makes the incorporation of innovations even more challenging (Yapa and Bärnighausen, 2018; Stein et al., 2018).

Examples of ineffective, inefficient, or varied care abound. Less than 60% of a sample of almost 7,000 patients in the United States of America received care based on the best available evidence (Spiegel et al., 2003). Inappropriate antibiotic prescription for viral infections was documented in a sample of more than 100,000 patients in the primary care of Canada (Cadieux et al., 2007). In Brazil, despite the increase in healthcare coverage in recent years (Barreto et al., 2014), treatment of common conditions is still below par in primary care. A national survey showed that only 28% of adults diagnosed with diabetes received appropriate care represented by a blood test, guidance on foot care, feet examination, and an appointment booked (Tomasi et al., 2017). Such proportion is less than the already low 35-65% of diabetic patients who have received recommended care across eight developed countries in a 2008 survey (Schoen

et al., 2009). An evaluation of the quality of antenatal care showed that, despite the high coverage, less than 30% of the teams take measures to ensure puerperium care up to ten days after delivery (Luz et al., 2018). In the municipality of Florianópolis, over 60% of adults registered in primary care clinics and diagnosed with asthma had never received inhaled corticosteroids (Bachmann et al., 2018).

Several studies have identified and summarised reasons for the low and varied uptake of evidence in healthcare settings. These reasons relate to the nature of the innovations, characteristics of the professionals and patients involved, and the social, organisational, economic and political context (Grol and Wensing, 2004). One key problem in health settings is that practitioners do not usually look for solutions to daily problems in the literature, but rather rely on experience or local colleagues (Ferlie et al., 2000; Mano-Negrin and Mittman, 2001; McCaughan, 2005). Some reasons for the low uptake of research evidence may include lack of awareness of current recommendations, but also low motivation and perception of external barriers (Cabana et al., 1999). In particular, the fit between interventions and context seems to be a major driver for the uptake of evidence in healthcare (Klein and Sorra, 1996; McCormack et al., 2013; Lau et al., 2016; Brennan et al., 2017). Adoption of innovations might be improved by strategies that enhance the role of local leadership, the innovation fit with the local system, and positive attitudes/motivation of local actors toward innovations (Wisdom et al., 2014)

1.3 Implementation science

Awareness of the gap between knowledge and practice in health and other policy areas has led to a growing field of study which focuses on developing, testing and improving strategies to promote and support implementation (Colquhoun et al., 2014). The literature in the field of how to put knowledge into practice, or how to improve healthcare, is diverse and contested (Contandriopoulos et al., 2010; Tabak et al., 2012; McKibbon et al., 2012). Different terms describe the field: quality improvement, knowledge translation, knowledge utilisation, knowledge transfer and exchange, innovation diffusion, implementation research, research utilisation, evidence-informed policy, and evidence-informed health systems (Graham et al., 2006; Grimshaw et al., 2012). One hundred different terms to refer to knowledge translation were found in a review (McKibbon et al., 2010).

Such diversity reflects diverse disciplines and research groups, e.g. research utilisation is more used in nursing research; knowledge transfer and translation

are preferred terms in Canada; implementation research is more frequent in the UK and Europe (Graham et al., 2006; McKibbon et al., 2010). The variation in terminology also reflects differences in main problems of concern, definition of knowledge, or target audience (Estabrooks et al., 2008). For example, part of the knowledge translation literature is based on a conceptualisation of research to evidence and evidence to practice gaps as rational decision-making problems (Woolf, 2008). Differently, in knowledge exchange and mobilisation literature, the problem is understood as a dynamic social process involving scientific and non-scientific knowledge (Contandriopoulos et al., 2010; Greenhalgh and Wieringa, 2011; Ward, 2017). Despite the conceptual distinctions, there are probably more commonalities than differences between these approaches, which all address the idea of solving social problems with knowledge (Wensing et al., 2012).

The processes involved in making innovations available to target individuals, the active efforts to put them into effective use, and the individual or collective decision to adopt are distinct (Greenhalgh et al., 2004). A commonly used nomenclature establishes a continuum between diffusion (passive spread of information), dissemination (active and targeted communication), and implementation (identification of barriers and use of fitted strategies) (Lomas, 1993; Davis and Taylor-Vaisey, 1997). Adoption has been defined either from the perspective of the adopter, as the commitment, decision, and action to adopt innovations (Davis and Taylor-Vaisey, 1997; Greenhalgh et al., 2004); or of the organisation, as the routine use of an innovation within an organisation (Klein and Sorra, 1996).

Throughout this thesis, I will use the term implementation to refer to the whole process of spreading, disseminating, implementing and sustaining innovations, primarily referring to the perspective of the implementers or organisation. Adoption will refer to the intention, decision, or act of adopting innovations, in the perspective of the target individuals or groups (Proctor et al., 2011). Definitions for these and related terms are in Table 1.1.

Table 1.1 Key definitions used in this study

Term	Definition
Implementation	Planned efforts to mainstream an innovation within an organisation (Greenhalgh et al., 2004).
Implementation research	The scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health services; it includes the study of influences on healthcare professional and organisational behaviour (Eccles and Mittman, 2006).
Implementation strategies	Techniques or methods aimed at improving or optimising the uptake and implementation of complex interventions into routine care (Proctor et al., 2013).
Innovations	A novel set of behaviours, routines, and ways of working that are directed at improving health outcomes, administrative efficiency, cost-effectiveness, or users' experience and that are implemented by planned and coordinated actions (Greenhalgh et al., 2005).
Interventions*	Organised systems of action put in place to change the course of a problematic situation, or more specifically, to overcome a health system or services problem (Contandriopoulos et al., 2000).

* In this thesis, intervention and programme will be used as synonyms.

Various frameworks, models and theories have been developed to explain and guide implementation. One systematic review established 13 different research traditions which informed research on the diffusion of innovations in health services, ranging from rural sociology to complexity studies (Greenhalgh et al., 2005). In another review (Tabak et al., 2012), 61 models, theories or frameworks of dissemination and implementation research were listed. Ward (2017) reviewed 47 models of knowledge mobilisation to propose a framework to support decision-makers to identify helpful models.

Although there are distinctions between theories, frameworks and models, I have pragmatically adopted 'models' to refer also to theories and frameworks (Tabak et al., 2012). This choice was an attempt to avoiding conceptual confusion with the programme theories that are the focus of this study. A separate discussion about the meanings of theory in evaluation research will be made in chapter 3.

One model frequently used in implementation research is the diffusion of innovations theory (Valente and Davis, 1999; Rogers, 2003; Dearing, 2009). Rogers systematised a general theory of diffusion based on a review of hundreds of empirical studies across diverse fields. Four main elements influence the

spread of a new idea: the innovation itself, communication channels, time, and a social system. Characteristics of the innovation that influence diffusion include perceived complexity; compatibility with current practice; trialability, or the ease with which an innovation can be tried; observability, or the degree to which the results of the innovation are visible to others; and the relative advantages in comparison with current practice. Adoption would be an individual decision process represented in a stepped model comprising awareness, persuasion, decision, implementation, and confirmation. The rate of adoption within a social system would follow an S-shaped curve which reflects individual innovativeness and adopter categories (innovators, early adopters, early majority, laggards). One key component of the diffusion of innovations theory is the role of local influencers: change agents, champions and opinion leaders. Change agents are external to the system and usually drive change efforts. Champions are internal to the organisation and have the role of pushing forward implementation, overcoming barriers and motivating others. Opinion leaders are individuals with more centrality and status in communication networks, and therefore whose behaviour regarding innovations has marked influence over others within their social groups. (Valente and Davis, 1999; Rogers, 2003; Dearing, 2008).

Although highly influential in implementation studies (Estabrooks et al., 2008), diffusion theory also has some limitations. It is primarily descriptive rather than a prescriptive theory. Some constructs, like the adopter categories, have been criticised for limited empirical usefulness. Adoption is seen only as an individual decision. There is little attention to the integration of context into an analytical framework (Greenhalgh et al., 2005). Other authors have built upon and expanded original concepts of the diffusion theory (Valente, 1996; Lundblad, 2003). Fitzgerald et al. (2002) suggested, based on case studies of innovation in the National Health System (NHS), that diffusion of innovations studies should be more concerned with: an active role for the recipients of innovations, including local reinvention; a review of adoption as individual decision, incorporating collective processes of negotiation; and emphasis on the role of context as an actor of the change process rather than background or setting.

Other models have attempted to explain the implementation process from a more prescriptive perspective, to guide the development and evaluation of implementation interventions. The PARIHS framework (Kitson et al., 2008; Harvey and Kitson, 2016) describes the successful implementation as a function of the evidence, the institutional context, and facilitation strategies. In practice, it has been used mostly to analyse implementation retrospectively. The Normalisation Process theory (Murray et al., 2010; May, 2013) addresses the

factors involved in routinisation (normalisation) of interventions. It has been used mainly in the development and process evaluation of complex intervention trials.

The proliferation and growing complexity of models have led to attempts of meta-theoretical synthesis to guide implementation research. One comprehensive model of the determinants of diffusion of innovations in health service organisations included the innovation, adopters, communication channels, inner context, outer context, the implementation process, and external linkages (Greenhalgh et al., 2005). The Common Framework for Implementation Research (Damschroder et al., 2009) summarises the components of the implementation process in five major domains (comprising 35 dimensions): intervention characteristics, outer setting, inner setting, characteristics of the individuals involved, and process of implementation. Frameworks for classifying and reporting implementation strategies have also been proposed (Proctor et al., 2013; Colquhoun et al., 2014; Leeman et al., 2017).

Across the reviewed literature, the following issues stand out: the context influences the value of evidence; individuals are not passive recipients of innovations, and the process of putting knowledge into use is social as much as rational. In such a complex scenario, passive dissemination of knowledge has proven insufficient to change professional practice (Grol and Grimshaw, 2003). Therefore, several active strategies to facilitate implementation have been developed and tested in healthcare settings, as set out next.

1.4 Implementation strategies

The Cochrane EPOC Group (Effective Practice and Organisation of Care) defines implementation strategies as interventions designed to bring about changes in healthcare organisations, the behaviour of healthcare professionals or the use of health services by healthcare recipients (EPOC, 2015, p.9). A taxonomy of such strategies is available, including 22 interventions, most targeting healthcare workers (EPOC, 2015). A more exhaustive synthesis, based on a panel of experts in implementation science and clinical practice, reached consensus on 73 strategies and their definitions (Powell et al., 2015).

Some authors have contested the use of the term 'implementation strategies' to refer to all strategies used in implementation research and practice as an oversimplification. Reporting guidelines and classification systems have proliferated to facilitate interpretation of findings, synthesis across studies, and identification of gaps (Leeman et al., 2017).

Most implementation strategies available target individual factors, like knowledge, routines, or attitudes. Consistently, most of the available evidence on effectiveness refers to such strategies. In low-income countries, the strategies that have shown more effectiveness in trials (measured by process outcomes) are those based on interpersonal communication, e.g. educational meetings, training, educational outreach, practice facilitation, and local opinion leaders (Pantoja et al., 2014). Less is known about organisational-level and system-level strategies, despite the acknowledged influence of a broad range of factors in healthcare change, e.g. economic, administrative, organisational or related to the patients (Grimshaw et al., 2004; Grol et al., 2007).

Few implementation studies in low- and middle-income countries have been conducted under real-world conditions and in response to implementation problems, both of which are distinguishing characteristics of implementation research. Studies conducted in controlled settings usually involve additional funding or management support for implementation, which in turn are implementation strategies per se. The fact that most implementation research comes from such 'enhanced' conditions limits the application of their lessons to routine conditions, in particular, in low-resourced settings (Alonge et al., 2019).

One implementation strategy which has shown effectiveness in changing the behaviour of health professionals to adopt new practices is the mobilisation of local opinion leaders (Flodgren et al., 2019). Previous research has proven that opinion leaders can be effective in changing professional behaviour, but effectiveness varies both within and between studies. The variability of the outcomes has been attributed to differences in types of intervention, setting and outcomes (Flodgren et al., 2019). More research is needed on the change processes and context mediators that affect the effectiveness of opinion leaders.

1.5 Origins and relevance of the study

The study reported in this thesis provides a retrospective look into a change process in the primary care system of the Brazilian municipality of Florianópolis. This city is a national leader in primary care and since 2010 has developed innovations in access, teamwork, continuity and quality of care. Examples include advanced access, a new system to facilitate access to medical consultations, and nursing protocols, guiding documents to enhance nurses' roles in clinical care. One implementation strategy used in such innovation process was the involvement of local opinion leaders (Flodgren et al., 2019) in implementation activities.

This study was born from my experience as a primary care manager in Florianópolis, from 2010, when I moved from clinical work to management, to 2015, when I left the job to conduct this study. In that position, I was responsible, among other duties, for implementing innovations and designing implementation strategies. Moved more by need than evidence, my team in primary care management identified professionals who we saw as local experts or practice models. We then engaged these professionals in implementation activities like workshops, peer meetings and workgroups (Zepeda et al., 2013a; Zepeda et al., 2013b). We decided to draw on the expertise and experience of our colleagues as resources for innovation. What we observed was that while some teams would imitate their examples or seek their support, others would see them with distrust and resist to change.

Retrospectively, I identified that we were mobilising opinion leaders, although we would not use this term at that time. I labelled the strategy retrospectively for this study. As we observed variable effects of the opinion leaders across distinct settings and innovations, we started to question ourselves about the active ingredients of that strategy and the context factors which explained the variation. In this thesis I tried to answer those questions by analysing the roles of those opinion leaders as change facilitators.

Most opinion leaders' studies were conducted in hospital settings and high-income countries, and it is not clear to which extent the findings apply to primary care settings and low- and middle-income countries (Flodgren et al., 2019). Health systems in low- and middle-income countries differ from those in high-income countries in terms of the availability of resources and access to services (Pantoja et al., 2017). Primary care organisations differ from secondary care in characteristics such as team composition, organisational structures, culture and working practices (Lau et al., 2015). In such conditions, problems and strategies work differently and have distinct relevance, and implementation is more challenging.

More research is needed to understand the mechanisms of change and context factors associated with the effects of opinion leaders in professional behaviour, in primary care settings of low-resourced countries. Understanding how opinion leaders enact change within specific contexts could inform the development of better interventions using these actors (Flodgren et al., 2019).

Based on previous research and my experience, I hypothesised that analysing the fortunes and failures of the change process that occurred in Florianópolis could contribute to addressing some current knowledge gaps about opinion

leaders. I chose a realist evaluation approach (Pawson and Tilley, 1997) during the early planning of the study, for some reasons outlined next.

First, it was compatible with my philosophical position. I embraced a position about social research that rejects positivism but does not embrace the radical relativism of constructivism. Realism sits in this middle-path, by sustaining that the social world is composed of real objects with inherent powers and causalities and that our knowledge of these objects is partial and cumulative (Pawson and Tilley, 1997; Pawson, 2013). Second, because I wanted to understand an agency-based programme, and realism proposes that social programmes bring about change through the reasoning and choices of the subjects (Dalkin et al., 2015; Westhorp, 2018). Third, because I was particularly interested in how variations in the context – the actors, their relationships, the approach to implementation, the institutional climate – enabled or hindered the influence of the opinion leaders. Realist evaluation integrates the context in the analysis rather than considering it as noise (Marchal et al., 2012).

1.6 Aim and objectives of the study

This thesis aims to inform future behaviour change interventions in primary care involving opinion leaders, by analysing the roles of opinion leaders during the implementation of two innovations (advanced access and nursing protocols) in the primary care system of Florianópolis. The objectives are as follows.

1. To reconstruct, from the stakeholders' views, the opinion leaders' programme in Florianópolis

2. To identify candidate theories about how opinion leaders promote innovation in healthcare settings.

3. To develop, test, and refine, programme theories about the roles that opinion leaders played in Florianópolis.

4. To synthesise a refined middle-range theory about the roles of opinion leaders in primary care innovation.

The study is a realist evaluation in which the programme is the mobilisation of opinion leaders to support innovations. The primary outputs are refined programme theories about opinion leaders. Programme theories are defined as hypotheses about how the activities of programmes lead to their outcomes (Davidoff et al., 2015). These theories are provisional contributions of this study to theory and research. The secondary outputs are considerations for practice extrapolated from the refined theories. These considerations are lessons

extrapolated from the study; they should be relevant to decision-makers interested in strategies for primary care innovation and can inform future interventions based on opinion leaders in the Brazilian primary care system and other similar settings.

1.7 Plan of the thesis

This introductory chapter briefly presented the problem of how to best put evidence into practice for improving health services; summarised explanatory models and strategies available; introduced the study topic (opinion leaders), the institutional scenario and the programme; and stated the aim and objectives.

The remaining of the thesis is organised as follows. Chapter 2 is a review of the literature on opinion leaders with a focus on the aspects which fed the programme theories. Chapter 3 describes the methodology, including a description of the setting, innovations, and opinion leaders; key principles of realist evaluation; the study design; and methods used for data collection and analysis. Chapter 4 presents the initial programme theories, which are hypotheses about how the programme worked. These theories are the focus of the subsequent evaluation.

Chapters 5 to 7 present the main findings of the study, which are organised in three refined programme theories. Chapter 5 explains how opinion leaders are motivated to engage in implementation. Chapter 6 is about how opinion leaders bring credibility to innovations. Chapter 7 examines how opinion leaders promote behaviour change.

In chapter 8, I discuss the findings on a higher-level of interpretation, cutting across the three theories. I compare key findings with previous research, discuss limitations and strengths, and suggest considerations for research and practice.

Chapter 2 Opinion leaders

2.1 Introduction

In this chapter, I review the literature about opinion leaders in healthcare. First, I compare some definitions of opinion leaders across distinct research streams and summarise key characteristics of opinion leaders. Then, I discuss methods commonly used to identify opinion leaders and what distinguishes these actors from other influential agents. I also present typologies of opinion leaders which informed the analysis in this study, like the distinction between the peer and the expert. Last, I summarise studies that assessed the effects of opinion leaders in healthcare settings. Some hypotheses about the opinion leaders' roles which fed the programme theories in this study are introduced throughout the chapter.

2.2 Concept

Opinion leaders have been defined in many ways, reflecting distinct approaches to their study, or distinct research streams, e.g., sociometric studies, intervention trials, or organisational studies. In the sociological literature on innovation diffusion, they are well-connected individuals at the centre of interpersonal communication networks; their behaviour concerning innovations influence the adoption decisions of others, accelerating the rate of diffusion (Valente and Davis, 1999; Rogers, 2003). This concept underpins most studies on the nature of opinion leaders and of their social influence. In the medical literature related to the implementation of evidence-based practice, opinion leaders are usually 'educationally influentials' (Thomson O'Brien et al., 1999; Flodgren et al., 2011). This concept underpins the development and test of interventions which attempt to manipulate opinion leaders to promote professional behaviour change. Qualitative studies of organisational change have shed light on other aspects of opinion leadership, e.g. their roles in linking their groups to external sources of information, or yet in resisting to innovation (Locock et al., 2001; Dopson et al., 2001; Fitzgerald et al., 2002).

Across the mentioned research streams, opinion leaders are social influencers who draw on interpersonal relationships to promote individual and collective change. Next, I present key concepts and related constructs which informed the programme theories in this study.

2.2.1 Early studies on opinion leaders and the 'two-step flow' hypothesis

The concept of opinion leaders emerged from communication studies which demonstrated the role of interpersonal relations in the flow of information and influence (Katz and Lazarsfeld, 1955; Merton, 1968b). These studies caused a growing interest in the characteristics and roles of those individuals who, by their key positions in communication networks, had marked influence over others in their social groups (Weimann, 1994). Key characteristics of opinion leaders shown in these first studies have influenced most definitions that came after, e.g., personal connectedness and external communication.

In 'The People's Choice', Lazarsfeld et al. (1944) analysed the impact of mass media during a presidential campaign in the USA and proposed that ideas flow from the media to opinion leaders and from the opinion leaders to fewer active sections of the population, introducing the hypothesis of the two-step flow of communication. In 'Patterns of Influence' (the 'Rovere Study'), Merton (1949) built upon the idea of interpersonal influence to identify a sample of opinion leaders and produced a first typology, which included distinctions like local versus cosmopolitan, and monomorphic (influential in one theme) versus polymorphic (influential across a range of topics).

In 'Personal Influence' (the 'Decatur Study'), Katz and Lazarsfeld (1955) defined opinion leadership as 'leadership at its simplest: it is casually exercised, sometimes unwitting and unbeknown, within the smallest groupings of friends, family members, and neighbours. It is not leadership on the high level of Churchill, nor of a local politico; it is the almost invisible, certainly inconspicuous form of leadership at the person-to-person level of ordinary, intimate, informal, everyday contact' (Katz and Lazarsfeld, 1955, p.138). This definition highlights the fact that the opinion leaders' influence is usually not only informal but non-purposeful.

The first study to demonstrate opinion leadership in healthcare comes from this research tradition. In 'Medical Innovation' (the 'Drug Study'), Coleman et al. (1957) analysed the diffusion of prescription of a new drug (tetracycline) among doctors of a USA city. They demonstrated that doctors relied more on colleagues than other sources to make adoption decisions; and that the first to adopt were better integrated into the network.

Re-examining the early studies of opinion leadership, Katz (1957) suggested that opinion leaders differ from non-opinion leaders by the personification of certain values (who one is); their competence or knowledge (what one knows); and their

strategic social location in networks (whom one knows, both within a group and 'outside'). In this definition, opinion leaders are individuals held in high esteem by their group, considered knowledgeable, well-connected and accessible.

Although highly influent and still used as a reference in communication studies, the two-step flow hypothesis has been criticised for oversimplification and re-examined and expanded over time. Opinion leaders are more often influenced by personal contacts than by the media (Katz, 1957). Opinion leadership varies across topics so that one can be an opinion leader in one topic and follower in another topic. They can also change the topic in which they are influential, or their role between an influencer and influenced, over time. The observation that opinion leaders are both disseminators and recipients of influence points to a 'multi-step' rather than 'two-step' flow of information. This assumption would support the analysis of opinion leadership not only in dyadic relationships but as horizontal and multidirectional flows within groups and communities of practice.

Last, a second early study in healthcare is worth mentioning, which analysed the diffusion of service innovations (measles immunisation and diabetes screening) among public health directors in the USA (Becker, 1970). This study demonstrated the association between social influence and uncertainty associated with the innovation - measles immunisation was perceived to have higher 'adoptive potential' than diabetes screening and was consequently adopted by opinion leaders which accelerated its diffusion. It also showed the difference between early adopters, who are not necessarily influential, and opinion leaders, who not necessarily adopt early, but when adopt are influential. This distinction was explored in further studies in the tradition of diffusion of innovations and social networks, as seen next.

2.2.2 The diffusion of innovations and social networks literature

Opinion leaders are a central piece of diffusion of innovations and social networks theories. In this literature, they are defined by their position and status in communication networks, and similarity to their peers. The heart of the diffusion process is the modelling and imitation by potential adopters of the experience of close peers similar to themselves who have already adopted an innovation (Rogers, 2003). Opinion leaders are more well-connected, thus communicate more with others; they draw credibility from perceived knowledge and accessibility, and they serve as models because of conformity to the system norms. Their behaviour regarding innovations - either adopting or non-adopting

innovations - is then usually imitated by their peers (Valente and Davis, 1999; Rogers, 2003; Dearing, 2008).

Conformity to the system's norms is an important component of this definition of opinion leaders. They are usually not the very first ones to adopt innovations, because this would differentiate them too much from their colleagues and the group standards of practice. Instead, they tend to follow the first adopters, or innovators, when the advantages of innovations, or a changing trend, are clear (Valente, 1996; Valente and Pumpuang, 2007).

Many studies of innovation diffusion show a predictable pattern of diffusion over time, the S-shaped curve of adoption proposed in innovation diffusion theory. The S shape is due to the engagement of the opinion leaders, as a subset of the early adopters, in communicating about the innovation and providing examples and models for their peers. Once opinion leaders adopt innovations, this is expected to accelerate the rate of adoption by their peers (Valente and Davis, 1999; Rogers, 2003; Dearing, 2008). They contribute to producing a critical mass of influence or a change threshold (Valente, 1996; Rogers, 2003). Non-adoption by opinion leaders also influences their social groups by messaging that the right thing to do is to wait and see.

Despite the limitations, diffusion of innovations was chosen as an initial framework for this study because of the central role of opinion leaders in the theory, and compatibility of the theory's basic premises with the assumptions of programme designers of the study setting, as will be seen later.

2.2.3 The educationally influential physician

The main definition of opinion leader in applied studies in healthcare was that of 'educationally influential' (Kronberger and Bakken, 2011). Educationally influentials are physicians to whom colleagues go for advice and information, and after whom they pattern their behaviour (Stross, 1996). Educationally influentials informally facilitate learning and practice change based on three clusters of characteristics: good communication and educational skills, knowledgeability, and humanistic and caring attitude. Their colleagues identify them as people who encourage learning and enjoy sharing their knowledge; who are experts and up to date clinicians; and who treat others as equals (Ryan et al., 2002; Wright et al., 2004).

The educationally influential physician is an adaptation of the concept of opinion leader to medical education. Educationally influentials were first identified among primary care physicians (Wenrich et al., 1971). The operationalisation of this

construct in a simple identification instrument (Hiss et al., 1978)[1] paved the way for the first opinion leader trials in healthcare settings, conducted in community hospitals (Stross and Bole, 1980; Stross et al., 1985). Since then, the concept has been applied to both generalist and specialist domains and modified. Varied criteria identify the educationally influential physicians across studies, sometimes with criteria specific to certain medical specialities. For that reason, some authors have advocated for more systematic validation of the construct (Wright et al., 2004; Kronberger and Bakken, 2011). However, the domains of communication, knowledge and humanism persist as a major contribution to the operationalisation of opinion leadership in healthcare interventions.

2.2.4 Other conceptualisations of opinion leadership

Opinion brokers

The sociologist Ronald Burt compared opinion leaders to the 'network entrepreneurs' studied in social capital and proposed that they are in fact opinion brokers which connect distinct status groups. The connections between groups are structural holes in their social structure. Individuals whose relationships span these holes (the opinion brokers) enjoy information and control advantages. In other words, they know about and have a hand in more rewarding opportunities. In this conception, the two-step flow is a by-product of opinion leaders motivated by benefits accruing from their intermediate roles, or searching for competitive social advantages (Burt, 1999).

The idea of opinion leaders as individuals 'in-between' social groups, or on edge rather than on the top of their groups, relates to the observation that opinion leaders usually have more external communication than non-opinion leaders (Rogers, 2003). Such external connections would allow them to link their groups to relevant external resources. Beyond carrying information, opinion leaders have a role in translating and adapting external information to their local groups (Fitzgerald et al., 2002).

Drawing upon Burt's propositions, other authors have suggested that opinion leaders and opinion brokers are not the same; instead, they would share the regulation of communication within social networks (Aula and Parviainen, 2012). While opinion brokers bring innovation to the network, opinion leaders determine its adoption. Both concepts are ways of describing influence within a network. Independent of the terminology chosen, what these studies have added to the

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[1] Although much cited, this study is out of print and I was not able to find a copy, therefore it is acknowledged here as mentioned by other authors.

concept is an analysis of the motivation of opinion leaders, and the notion that they play important roles both within and across the borders of their social groups.

Change facilitators

While the formulations described earlier all refer to opinion leaders as individuals influencing other individuals, some organisational studies have looked at opinion leaders as facilitators or accelerators of collective and organisational change. To explain this perspective, I will summarise two qualitative studies of implementation of evidence-based practice in the NHS.

In the first study (Locock et al., 2001), interviews, questionnaires and document analysis were conducted across two study sites to explore determinants of success of 22 initiatives to implement evidence-based practice in the NHS. Analysis focused on assessing changes in clinical practice and broader organisational learning. The opinion leaders were informally defined as such by the interviewees, which saw their support to innovations as a key determinant of the success of the projects. They played roles like changing the perception of others about the value of innovations, adapting innovations to local conditions, and catalysing consensus in their clinical groups. One key contribution to the concept of opinion leaders was the differentiation between peer leaders, which draw credibility from tacit knowledge, and expert leaders, which exert influence based on academic authority.

In the second study (Fitzgerald et al., 2002), the authors conducted case studies of eight innovation projects, including non-clinical innovations to understand the role of evidence and context in diffusion, and the nature of adoption decisions. This study was based on interviews with opinion leaders which were selected based on publications or positions, then snowballing nomination. Their roles included actively seeking resources, adapting and translating innovations to fit local contexts, negotiating and interpreting the value and meaning of innovations. Key contributions to the concept of opinion leaders were the demonstration of a strategic, political role, which helps to achieve local consensus and to set the agenda of the local group of practitioners; and of a boundary-spanning role, which helps to connect the worlds of research and practice. Boundary spanners are also defined as information processors, and are supposed to work across organisational and other boundaries (Greenhalgh et al., 2005). The boundary-spanning role relates to the opinion broker concept early discussed.

Across these studies, opinion leaders actively sought innovations, negotiated its value and meaning, adapted and translated relevant information to their groups, and helped to establish new consensus and promote collective shifts in practice.

Both studies stressed the roles of opinion leaders which emerged throughout the projects, sometimes with ambivalent or opponent positions.

The definition of opinion leaders adopted in this thesis was taken from Locock et al. (2001 p. 746): those perceived as having particular influence on the beliefs and actions of their colleagues in any direction, whether positive (in the eyes of those trying to achieve change) or negative. Two assumptions implied in such definition are that opinion leaders are those perceived as influentials, independently of formal roles; and that they can work either in favour or against innovations. This definition contrasts with the pro-innovation bias of some definitions, e.g. in Rogers (2003 p. 300), opinion leadership is the degree to which someone is influential over others 'in a desired way'. Informal, emergent and opponent opinion leaders all played important roles in this study.

Opinion leaders in virtual spaces

The advent of the Internet has changed the landscape of human communication and, by extension, of research on innovation diffusion. The difference between information senders and receivers and the distinction between interpersonal and mass communication has been blurred (Schäfer and Taddicken, 2015). The extensive adoption of social media for communication and the use of advanced computational social science to map extensive online networks have set new scenarios for the study of social influence (Jungnickel, 2018; Centola, 2019). The growing number of people who look for advice, information and guidance on the Internet have produced new types of influential, e.g. mediatised opinion leaders who use of a broad range of media sources (Schäfer and Taddicken, 2015), or para social opinion leaders, media personalities with whom certain followers develop quasi-intimate relationships (Stehr et al., 2015).

The topic of opinion leadership in virtual spaces is acknowledged here because of its growing importance for the study of opinion leadership.

2.3 Characteristics of opinion leaders

Attempts to distinguish opinion leaders from non-opinion leaders have led to the identification of a range of defining characteristics related for example to demographic variables, social position and status, or personality traits (Weimann, 1994; Rogers, 2003). Katz (1957) defined opinion leadership as a matter of personal values, knowledge and connectedness. Rogers (2003) defined key attributes: external communication, accessibility, social status, innovativeness,

and conformity to group norms. Opinion leaders seem to have a sum of personal and social features, none of which sufficient to define them. Next, I provide a synthesis of characteristics which seemed consensual in the literature and were relevant for this study.

Knowledge and status. Opinion leaders have a higher status than their followers, mostly based on their perceived knowledge. High status has been defined in terms of socioeconomic level, formal education (Rogers, 2003), or academic positions (Fitzgerald et al., 2002). Independent of training or academic authority, opinion leaders draw credibility from informal recognition of their knowledge by close colleagues (Weimann, 1994, p.15; Borbas et al., 2000). Perceived knowledge of local barriers and resources, or contextual knowledge, seems as important as technical knowledge (Thomson O'Brien et al., 1999).

Accessibility. Opinion leaders are more central in their networks, are well-connected both formally and informally, and have more social participation (Valente and Davis, 1999; Thomson O'Brien et al., 1999; Rogers, 2003). They are embedded in local groups, accessible and approachable, and therefore relied upon by peers who look for advice in uncertain situations (Thompson et al., 2006). They are sought for advice by their peers because they are perceived as willing to share their knowledge with others (Katz, 1957; Kronberger and Bakken, 2011).

External communication. Opinion leaders are more cosmopolite and have more contact with change agents and other social systems (Rogers, 2003). They actively bring innovations to local contexts (Fitzgerald et al., 2002), linking their groups to external sources important to the group's activities (Locock et al., 2001). This greater external contact reinforces their perceived knowledge and status.

Innovativeness and conformity. One key feature of opinion leaders is the apparent paradox between leading in innovation adoption and conforming to group norms (Rogers, 2003). They are usually more innovative than their peers but are not the very first to adopt. Once opinion leaders adopt an innovation, they are followed, what is not true to early adopters or innovators who are not opinion leaders (Rogers, 2003; David Johnson et al., 2012). One explanation for this apparent paradox is the effect of group norms in the innovativeness of opinion leaders. If the group is innovative, their opinion leaders will also tend to be, and if the group is more conservative, their opinion leaders will be more reluctant in adopting innovations (Rogers, 2003).

Homophily. Despite all the research on what distinguishes opinion leaders, they usually happen to be quite like their peers in terms of background, language, beliefs, and even competence and position in networks. The degree of similarity

between individuals involved in a communication relationship is labelled as homophily, a characteristic that facilitates communication and exchange (Rogers and Bhowmik, 1970; Rogers, 2003). The similarity of roles within a social network, or structural equivalence between individuals, seems to be particularly important to diffusion of adoption behaviours (Burt, 1999; Neal et al., 2011). When individuals too innovative are selected as opinion leaders, the heterophily between them and their peers can prevent influence. Their peers might suspect of their judgement about innovations, or see them as unrealistic models (Rogers, 2003).

Credibility and influence. Cutting across the characteristics outlined above, opinion leaders are credible and influential members of their local social groups (Thompson et al., 2006). They are credible because their peers perceive them to be knowledgeable, reliable, accessible, like-minded. They are influential because, based on such credibility, others look for their advice, support and example when facing uncertainty (Katz, 1957; Locock et al., 2001; Rogers, 2003; Thompson et al., 2006). It was the demonstration of such influence across settings and topics which triggered the development of interventions that use opinion leaders to promote behaviour change in healthcare (Greenhalgh et al., 2005; Flodgren et al., 2019).

In summary, opinion leadership seems to be determined by a complex interaction of personal and social features (e.g., social status, accessibility) and characteristics of the social group (e.g., innovativeness). Therefore, the study of opinion leaders should consider it as a phenomenon contingent on the social relationships and institutional contexts in which they are embedded (Locock et al., 2001).

2.4 Methods for identifying opinion leaders

Variations in the identification of opinion leaders across studies are one of the main postulated causes for the variability observed in their effects (Thompson et al., 2006; Flodgren et al., 2019). The methods for measuring opinion leadership are diverse and may identify distinct sets of opinion leaders (Grimshaw et al., 2006), or even distinct constructs (Weimann, 1991). However, an opinion leader identified by one method will probably be identified by others; and it is an open question whether any methods identify opinion leaders who are more effective in promoting behaviour change (Valente and Pumpuang, 2007; Flodgren et al., 2019).

Rogers (2003) identified four classic methods for identifying opinion leaders: the sociometric method, the self-designating method, the key informant method, and the observation method. This repertoire has been expanded, e.g. Valente and Pumpuang (2007) summarised ten identification methods; others have also suggested selection based on formal position, reputation, or personality traits (Weimann, 1991; Weimann et al., 2007). Recent advances in methods of identification have focused on online communities (Bamakan et al., 2019). Most studies in health settings used only a few methods. From 24 trials included in the Cochrane review on opinion leaders (Flodgren et al., 2019), fourteen used the sociometric method, eight used the informant method, one used the informant and the sociometric, and one used the informant and the self-designating method.

The sociometric method consists of asking individuals to whom they go for advice about an innovation; those with more nominations are the opinion leaders. Although reliable, this technique requires a high number of respondents, usually all members of a system. In healthcare research, it is usually based on a questionnaire to identify the educationally influential (Stross, 1996). The self-designating method asks professionals to indicate their perceptions of their role as an opinion leader, e.g., asking if others look them for advice. It was the method used in most early studies of opinion leadership, but not in the Medical Innovation study (Coleman et al., 1957), which used the sociometric. The informant method relies on asking a subjective sample of key informants who are the opinion leaders in a system. Although cost- and timesaving, it depends on the familiarity of each informant with the system. In small systems, it can be as accurate as sociometric methods (Rogers, 2003). The observation method relies on independent observation of the interactions between professionals in a work setting; in practice, it is less used.

All trials that used the sociometric method applied the Hiss instrument for identifying educationally influential physicians (Hiss et al., 1978). The convergent validity of the Hiss instrument was tested in different professional groups within the NHS (Grimshaw et al., 2006). The opinion leaders identified were more likely than other respondents to possess the attributes defined in the diffusion of innovations and social influence theories, e.g., participation in local networks, academic status, experience.

An important aspect of the identification of opinion leaders is whether successive samples will identify the same opinion leaders in a system over time. While Rogers (2003, p.312) supported that opinion leaders are generally stable over time, Doumit et al. (2011) found that doctors opinion leaders were not stable over two years. Possible reasons for such transience of opinion leaders are lack of test-retest reliability of the identification method (the Hiss instrument), or that the

opinion leaders' influence does not last. Other authors have hypothesised that the formal identification of opinion leaders could change their relationships with other physicians in their networks and interfere with future influence (Locock et al., 2001; Ryan et al., 2002).

Last, an open question which is related to the validity of identification methods is whether opinion leaders and their followers are different. The idea of opinion leaders implies the existence of individual attributes that are fixed and inherent. However, opinion leadership is rather contingent on the relationships within social groups, characteristics of innovations, and institutional context (Greenhalgh et al., 2005). Opinion leaders change across topics and over time (Katz, 1957). The influence between opinion leaders (Weimann, 2008) and from non-opinion leaders (Valente, 1996) have been described. For such reasons, some authors regard opinion leadership as a continuous trait of differences in influence between individuals within a given group (Weimann et al., 2007; Gnambs, 2019).

2.5 Opinion leaders and other types of influentials

There are great variation and overlap in the terms used in the literature to designate opinion leaders and other influentials, such as champions, facilitators, knowledge brokers. It is not clear to which point such terms refer to distinct roles or similar constructs with distinct labels. For example, change agents are either considered as a separate role (Rogers, 2003; Thompson et al., 2006; David Johnson, 2012) or as a generic term referring to the various roles influencing practice change, including opinion leaders (McCormack et al., 2013; Cranley et al., 2017). In common, all those influential roles operate from the premise that interpersonal contact can change professional behaviour. They seem to differ in terms of methods of influence, e.g., persuading, linking resources; and mechanisms used to enact change, e.g., peer pressure, motivation (Thompson et al., 2006).

Opinion leaders are commonly conflated with champions (Borbas et al., 2000; Locock et al., 2001). Champions are people interested in implementing change, who work with enthusiasm, persistence, and conviction to drive implementation, without obvious compensation (Miech et al., 2018). As opinion leaders, they are usually informal roles, internal to the organisations, with on-going relationships with the peers, and who function based on social influence. However, opinion leaders primarily draw on the respect of their peers, while champions use more persuasion (Thompson et al., 2006). Opinion leaders, by definition, have followers while champions, for all their enthusiasm, may not have (Rogers, 2003).

Also, champions are frequently appointed by management, which makes unclear whether they function through social influence like opinion leaders or managerial status or processes (Flodgren et al., 2019). Champions may be effective to promote change to the extent they are also opinion leaders (Greenhalgh, 2018, p.187).

Some reviews have compared distinct influential roles in healthcare. Thompson et al. (2006) conducted a conceptual analysis of five roles (opinion leaders, facilitators, champions, linking agents and change agents), drawing on nursing, managerial, educational and medical literature. They defined attributes, built ideal cases and compared the roles. Both opinion leaders and champions seem to function based on informal social influence, but opinion leaders are more embedded in their social groups, more conform to the group norms, and more context-specific in their range of influence. David Johnson (2012) compared five facilitating roles in clinical and translational science (opinion leader, change agent, boundary spanner, structural hole broker, and collaborative knowledge broker). They drew largely on management and communication literature and compared the roles in terms of relational properties, cognitive abilities and motivational factors. In their analysis, opinion leaders are more embedded in social systems; have a role in seeking and adapting information to their systems; and are motivated by the recognition of peers and their intrinsic interest in innovations.

Cranley et al. (2017) conducted a comprehensive scoping review of nine facilitator roles (opinion leaders, coaches, champions, research facilitators, clinical/practice facilitators, outreach facilitators, linking agents, knowledge brokers and external-internal facilitators). As each role included change agent activities, they did not include change agent as a role. They also analysed the characteristics of facilitation associated with research use by healthcare professionals. Two characteristics that distinguished opinion leaders from the other agents were the respect and recognition of their peers, and informal influence based on perceived knowledge and experience.

Across the studies reviewed here, opinion leaders are set apart from other influential agents by their embeddedness in social groups; recognised knowledge, of the local context; and informal influence over their peers. Informal influence, usually based on close relationships, contrasts opinion leaders to more formal roles like boundary spanners or change agents, to whom bringing about change is a job (David Johnson, 2012). Embeddedness, contextual knowledge and informality all relate to the observation that opinion leaders are usually homophilous and accessible to their peers, and conforming to group norms (Rogers, 2003). Consistently, they do not function well in change agent or

champion roles that demand advocacy or use of authority. Their peers can see them as stepping beyond the established roles that give them credibility (Dearing, 2009).

2.6 Types of opinion leaders

Opinion leadership is a multidimensional concept. Distinct opinion leaders seem to fit distinct situations. These observations have led to attempts at defining types of opinion leaders. The first classification system was proposed by Merton (1968), which defined local vs cosmopolitans, and monomorphic vs polymorphic leaders. Local and cosmopolitan relate to the orientation toward the community or the larger society, respectively; monomorphic and polymorphic refer to influence in one topic or across a range of issues, respectively. The distinction between monomorphic and polymorphic is still today debated in the literature. While there is evidence for the existence of both types (Rogers, 2003), surveys have suggested that in healthcare settings opinion leaders are primarily monomorphic (Grimshaw et al., 2006; Doumit et al., 2011).

A framework of opinion leaders' dimensions was suggested to improve the definition across studies while accounting for distinct types of opinion leaders (Locock et al., 2001). The framework consisted of dimensions of opinion leadership represented by pairs of opposite features, including the much-cited distinction between peers and experts. Opinion leaders would sit at different points along the following axes:

- Technical expert - Peer
- Formal - Informal/emergent
- Supportive - Hostile
- Committed - Ambivalent/non-committed
- Corporate - Individualist/maverick
- Enthusiastic - Disaffected
- Optimistic - Cynical
- Leading by instruction - Leading by example
- Conformist - Deviant
- Professional/technical - Executive/managerial

Although acknowledging the relevance of most such types to the analysis of opinion leaders' roles, here I will describe in detail a few distinctions which directly contributed to the characterisation of opinion leaders in this study.

Peer vs expert

Expert opinion leaders are academics who endorse or help to evaluate the strength of evidence of the innovation. Their influence draws on academic authority and status. They are perceived to have technical knowledge. Peer opinion leaders are clinicians who relate the problems at issue to the working life of the colleagues. Their influence draws on representativeness and local credibility. They are perceived to have contextual knowledge. Peer opinion leaders also draw credibility from the fact that they are homophilous to their peers (Greenhalgh et al., 2005, p.121). Experts influence because they 'know' and peers because they 'understand'. Both academic experts and ordinary peers seem to influence the success of implementation, although in distinct stages and through distinct processes (Locock et al., 2001).

Peer and expert are ideal types, and the same opinion leaders can play both roles, but each seems more important in a different stage of implementation. Experts help to build confidence in the innovation in the initial stages of the project, while peers assume more importance as the project enters into a practical implementation stage (Locock et al., 2001).

The distinction between peer and expert relates to Merton's local and cosmopolitan typology (Merton, 1968b). The locals concern about their communities; they are parochial. The cosmopolitans look to the outside world, they are more ecumenical. Locals are influential because they understand their peers, which in turn respect their intimate appreciation of significant details of their daily lives. Cosmopolitans influence because they know about a topic, so the others look for their specialised skills and experience (Merton, 1968b; Weimann, 1994). A possible analogy is between the old family doctor, who resembles the local leader; and a competent but impersonal medical specialist, which would be the cosmopolitan leader (Weimann, 1994).

Formal vs informal/emergent

Several authors have highlighted the fact that opinion leaders are usually emergent and informal (Borbas et al., 2000; Greenhalgh et al., 2005; Dearing, 2009). It has been suggested that formalising their roles can harm their credibility and influence (Mano-Negrin and Mittman, 2001; Ryan et al., 2002). Informal and emergent opinion leaders (versus those nominated by project leaders) seem particularly important in primary care, where doctors value the knowledge and experience of local peers and tend to be sceptical about experts (Greer, 1988; Flottorp et al., 1998; McCaughan, 2005). Opinion leaders who emerge from among ordinary, 'rank-and-file' doctors seem particularly persuasive (Locock et

al., 2001). There seems to be a relationship between being a peer and an informal/emergent leader and being an expert and a formal leader.

Supportive vs neutral/opponent

Opinion leaders can contribute either positively or negatively to implementation, promoting adoption or reinforcing resistance to innovations. However, most research has focused on the extent or determinants of their effects in promoting behaviour change (positive effects). Rogers (2003) acknowledged a pro-innovation bias in innovation research which has limited our understanding of innovation failure, slow adoption, rejection or discontinuance. Weimann (1994) stressed the fact that most opinion leaders' studies have generally ignored the reinforcement of previous behaviour or prevention of change as effects.

Locock et al. (2001) listed factors which contributed to negative influence in implementation, including ambivalence, lack of enthusiasm, or hostility of opinion leaders towards the innovations. They found it hard to attribute implementation failure to neutral opinion leaders, since projects that failed to engage opinion leaders were also those with management problems or based on contested evidence. Ambivalence, a contradiction between speech and acts, or perception of a personal agenda were damaging for the credibility of the opinion leader. Active hostility threatened the survival of the projects.

2.7 Measuring the effects of opinion leaders

Opinion leaders have been tested in trials as single interventions or components of interventions, mostly to promote changes in adoption of new clinical behaviours by individual professionals (Davis and Taylor-Vaisey, 1997; Borbas et al., 2000; Grimshaw et al., 2006). Changes in non-clinical behaviour have been assessed through qualitative studies, e.g. use of electronic health records (Zheng et al., 2010) or mobile information technology (Hao et al., 2011). Some studies on organisational change in healthcare settings have also analysed effects of opinion leaders in the group and organisation levels, e.g. collective shifts in practice, or organisational learning (Locock et al., 2001; Dopson et al., 2001; Fitzgerald et al., 2002).

2.7.1 Trials

The first trials using opinion leaders were published in the 1980s (Stross and Bole, 1980) based on the concept of educationally influential physicians. Opinion leaders were frequently deliverers of the academic detailing or educational outreach interventions, which consist of visits of a trained person to a health professional in their settings (O'Brien et al., 2007). In this intervention, the opinion leaders' roles usually include face-to-face meetings to encourage practice change; providing credible information; discussing practical barriers to change; and using their informal bonds with the colleagues to facilitate discussion, support and persuasion (Soumerai et al., 1998; Borbas et al., 2000).

A recently updated Cochrane review on opinion leaders included 24 studies covering around 3,000 professionals and 30,000 patients (Flodgren et al., 2019). The first version, 20 years earlier, had included eight studies (Thomson O'Brien et al., 1999). The Cochrane review assessed the effectiveness of opinion leaders alone (five studies) or in combination with other interventions (e.g., audit and feedback) for improving compliance with evidence-based practice and patient outcomes. Additionally, it intended to compare informal vs formal methods of education, and single vs team opinion leaders. Studies were included independently of the methods used to identify opinion leaders.

In most studies, the roles and activities of the opinion leaders – what they do, how they do it, with which frequency - were superficially described, and their methods of influence were not clear. They used both informal and formal methods and most used face-to-face interaction. For instance, due to the lack of detail, the authors were not able to compare informal vs formal education methods.

All studies were conducted in high-income countries and most in hospital settings. One study was in developing countries (Althabe et al., 2008). Three studies were in primary care (Schectman et al., 2003; McAlister et al., 2009; O'Connor et al., 2009) and one in both primary and secondary care (Elliott et al., 1997). It is not clear if the findings of studies conducted in hospitals of developed countries would apply to primary care, which professional networks have distinct configurations and are less complex then hospitals (Grimshaw et al., 2006); or low and middle-income countries, which health systems have structure and resources more limited then high-income countries (Pantoja et al., 2014).

In the only trial in developing countries included in the Cochrane review, Althabe et al. (2008) compared a multi-component intervention including opinion leaders with no intervention to improve active management of labour and reduce the use

of episiotomy in maternity hospitals of Argentina and Uruguay. Opinion leaders were selected through a sociometric questionnaire, received a 5-day workshop training and were engaged in the dissemination of guidelines, on-site training, development of reminders, and monitoring of outcomes. The intervention arm showed improvement in the process (prophylactic use of oxytocin) and patient (reduction of post-partum haemorrhage) outcomes. This trial was one of a few which measured attitudes (readiness to change among birth attendants), which improved in the intervention hospitals.

A group of interrelated trials with primary care physicians of Canada (Majumdar et al., 2007; Majumdar et al., 2008; McAlister et al., 2009) shed light over the discussion of specificity of the opinion leader influence. In the first (Majumdar et al., 2007), patient-specific evidence summaries endorsed by opinion leaders were compared to usual practice on secondary prevention of cardiovascular disease. There were modest increases in the prescription of ACE inhibitors for heart failure but not of statins for ischemic cardiac disease. The same group of authors (McAlister et al., 2009) then expanded the design of the 2007 trial to include a third arm of evidence summaries non-endorsed by opinion leaders, in an attempt to isolate the effects of the opinion leaders and the evidence summaries. This time they only measured prescription of statins; there were no significant differences in prescription or blood cholesterol levels between the arms.

These distinct effects across classes of drugs or diseases reinforce the observation that opinion leaders are usually monomorphic. The authors hypothesised that the opinion leaders were more influential to heart failure, or the evidence for the ACE inhibitors was more compelling. Differences in effects across clinical procedures were also a finding in (Althabe et al., 2008). In that study, opinion leaders were effective in promoting the adoption of new practice (use of oxytocin) but not so much in eliminating a common practice (episiotomy).

In a third trial of the Canadian group (Majumdar et al., 2008), guidelines endorsed by opinion leaders were embedded into a multifaceted intervention directed to both patients with osteoporosis and their physicians. Testing and treatment for osteoporosis significantly increased in the intervention group. The more pronounced effects of this trial compared with the 2007 and 2009 ones could be due to the use of opinion leaders within a multifaceted intervention. In contrast, a sub analysis of the trials included in the Cochrane review has shown that the intervention effect was higher for studies of opinion leader alone compared with no intervention.

Another interesting comparison was made by Wright et al. (2008) in a trial of opinion leaders to improve colon cancer staging between physicians in Canada hospitals. They compared an intervention that combined both expert and peer opinion leaders with an expert-only opinion leader intervention. They found that the provision of information in a lecture by the expert opinion leader enhanced the lymph node assessment, but the addition of academic detailing of a peer opinion leader did not improve this effect. Those effects suggest distinct effectiveness for distinct roles of the opinion leaders in that specific context, but they are hardly generalisable.

The variability of results within and across the trials express how challenging it is to separate the effects of opinion leaders from co-interventions and the context. Specific aspects of the context seem to act as potential effect mediators, e.g., perceived novelty of the innovation, familiarity of the professional group with the topic, activities in which the opinion leader is engaged.

Overall, opinion leaders have shown a moderate positive effect in changing professional behaviour, of about 10% improvement in compliance with desired practise (Flodgren et al., 2019). The intervention effect was greater for opinion leaders alone compared to a single intervention. The effect on patient outcomes was uncertain. The results were variable within and between studies, so much so as the health settings, intervention designs, and activities of the opinion leaders.

Some issues of interpretation and generalisation limit the issuing of recommendations about how to best use opinion leaders to promote change:

- The distinct definitions of the opinion leader intervention make comparison across the studies challenging (Flodgren et al., 2019).
- It is not clear to which extent is possible to study opinion leaders as a discrete intervention separated from other components of multifaceted interventions and contextual influences (Greenhalgh et al., 2005).
- It is possible that opinion leaders are not well amenable to experimentation at all, and that any attempts to manipulate opinion leaders will damage their effectiveness (David Johnson, 2012; Greenhalgh, 2018, p.187).

2.7.2 Qualitative studies

Qualitative studies of innovation in the NHS have suggested that opinion leaders are perceived by those involved in implementation efforts as more important than what trials suggest (Ferlie et al., 2000; Dopson et al., 2001; Locock et al., 2001; Fitzgerald et al., 2002). Those studies have analysed other effects of opinion leaders, beyond the clinical targets of innovation projects, like changes in group

attitudes about innovations or motivation of the staff (Spooner et al., 2001). A complex image of opinion leadership, strongly influenced by the context and fundamental to the success of innovation and change, emerges from this literature.

In one study (Dopson et al., 2001), the involvement of opinion leaders was among the three factors that influenced the success of the projects, alongside the strength of evidence and organisational support. Emergent opinion leaders were particularly important, either in supportive, hostile, or ambivalent positions. Their observed effects were changes in the standards of good practice, more acceptability of the innovations, and collective shifts in practice.

In another study (Fitzgerald et al., 2002), opinion leaders were important facilitators of collective adoption decisions. Their roles were strongly affected by context factors like the nature of interprofessional relations, the complexity of organisational structure, resourcing to the innovations and external professional organisations. There was no evidence of individual adoption decisions, but rather of an interplay between actors and context in reinventing innovations and negotiating their value and meaning.

A third relevant study (Spooner et al., 2001), based on interviews with primary care staff, managers and specialists in England, explored reasons for the involvement of general practitioners (GPs) in a successful quality improvement scheme based on GP peer meetings. The scheme aimed to promote ownership of the targeted changes by the GPs, and the first who became involved functioned as opinion leaders, actively encouraging other practices to take part. The findings highlighted the contribution of the opinion leaders to the success of the scheme through many roles, including their buy-in of the institutional vision, local leadership within the practices, the setting of professional standards, and alignment of clinical and managerial agendas.

Qualitative studies usually have small samples and cannot face the internal validity of trials, but they can provide insights on how opinion leaders act and relate to the others, how they enact change, and how they interact with the broader context. Some authors have advocated for more research on the nature of the influence of opinion leaders and how it plays out across distinct contexts (Greenhalgh et al., 2004; Flodgren et al., 2019), using methods able to analyse and explain the variability in their effects. This study aimed to address these knowledge gaps.

Chapter 3 Methodology

3.1 Introduction

This chapter explains the study methodology. First, I link the aim and objectives stated in chapter 1 to research questions. Then I describe in detail the study setting, covering the health system, institutional setting, management structure, characteristics of the innovations, the opinion leaders´ strategy and characteristics of the opinion leaders. Subsequently, I summarise key principles of realist evaluation. The chapter follows with an overview of the study design and a detailed examination of the methods used for theory development and theory testing/refining. Last, I comment on ethical and methodological issues.

3.2 Aim, objectives, and research questions

This study aims to inform change interventions in primary care, by analysing the roles of opinion leaders during the implementation of two innovations (advanced access and nursing protocols) in the primary care system of a Brazilian city. The general research question is as follows:

How and why the involvement and contribution of opinion leaders in the implementation of innovations influenced the attitudes and behaviour of other practitioners about those innovations within the context of primary care in Florianópolis, Brazil?

Building upon this question and the study objectives introduced in chapter 1, I developed specific research questions. The correspondence between the objectives and research questions is in table 3.1.

Table 3.1 Study objectives and research questions

Objectives	Research questions
1. To reconstruct, from the stakeholders' views, the opinion leaders' programme in Florianópolis	2.1. Who were the opinion leaders of advanced access and nursing protocols in Florianópolis?
	2.2. How were they involved in implementation and which roles did they play?
2. To identify candidate theories about how opinion leaders promote innovation in healthcare settings	1.1. What are the outcomes of opinion leaders' interventions in healthcare settings?
	1.2. What are the processes by which opinion leaders facilitate innovation in healthcare settings?
3. To develop, test, and refine, programme theories about the roles that opinion leaders played in Florianópolis	3. What expected and unexpected outcomes were observed from the involvement of opinion leaders in innovation in Florianópolis, and which mechanisms and contextual factors can explain such outcomes?
	*3.1. How did the recognition of opinion leaders affect their motivation and buy-in of innovations?
	*3.2. How did the contribution of opinion leaders to innovation affect the acceptability of innovations?
	*3.3. How did the experience of opinion leaders with innovations affect the behaviour of other practitioners about innovations?
4. To synthesise a refined middle-range theory about the roles of opinion leaders in primary care innovation	4.1. Which key theoretical propositions explain the roles of opinion leaders in primary care innovation in Florianópolis?
	4.1. Which generalisable lessons can be drawn from the refined middle-range theory?

* Guiding questions of the theory development (see also table 3.5)

3.3 Study setting

The setting and the programme were introduced in chapter 1. In this section, I provide details about the national and local health system, the innovations and the institutional context, and the programme.

Throughout this thesis, primary care and primary health care will be considered synonyms. I adopted the definition of primary care as the health services provided at the community level and related governance systems (World Health Organization, 2008). In the study setting, it refers to the clinics, professionals, and resources involved in providing community healthcare in Florianópolis

The description of the programme - who were the opinion leaders, their activities and expected roles, conditions in which they emerged, other important actors -

was produced alongside the initial theory development and correspond to outputs of the study's objective 1. As such, it could be considered initial descriptive results. I opted for positioning this material at the beginning of the methods because it is essential to understand the decisions about study design, data collection and analysis, which are presented next.

3.3.1 The national health system

In the last two decades, the Brazilian national health system, or Unified Health System (Sistema Único de Saúde - SUS, in the original acronym) has made progress in health coverage through the development and scaling up of the Family Health Strategy (Estratégia de Saúde da Família - ESF, in the original acronym), a singular model for delivering primary care (PC) (Macinko and Harris, 2015). The ESF comprises multi-disciplinary teams (doctor, nurse, nursing assistant, and community health workers) which are responsible for geographic catchment areas, provide preventive care, medical consultations, and free medicines, and act as gatekeepers to other health services. In 2017, more than 40,000 teams covered about 65% of the population.

In Brazil's decentralised health system, the municipalities have full responsibility for providing all primary care and most secondary and tertiary care. The Ministry of Health recommends one ESF team to each 3,000 to 4,000 people, although in some densely populated catchment areas these numbers are frequently exceeded, with negative implications to access and continuity of care (Macinko and Harris, 2015; Macinko et al., 2017). The participation of public providers is predominant in primary care, while contracted private providers are more common in specialist and hospital care. Although about a quarter of the Brazilians have some private health insurance, many of those also use the public health system for example to have access to medicines, tests and vaccinations (Macinko and Harris, 2015; Macinko et al., 2017). The coordination of the distinct providers in the municipal level is the responsibility of the municipal health authority.

The ESF has contributed to improvements in health services coverage and access (Barreto et al., 2014), health inequalities (Hone et al., 2017), and health outcomes like cardiovascular mortality (Rasella et al., 2014), infant mortality (Aquino et al., 2009) and hospital admissions (Macinko et al., 2010). Increasing the ESF coverage has been associated with a reduction of amenable mortality, which is higher in municipalities that have strong local governance (Hone et al., 2017).

Despite the achievements of the Brazilian primary care programme, the persistence of variations in the quality and productivity of the ESF across the country has contributed to disparities in access to PC (Hone et al., 2017). The health system also faces constant challenges in organisation, governance, and capacity to implement and sustain innovations (Victora et al., 2011; Massuda et al., 2018). In the last few years, political and economic crises and austerity policies have further reduced investment in health programmes (Rasella et al., 2018; Castro et al., 2019). The resilience of the health system to counteract such crises and improve local capacity will be paramount to protect the progress towards universal coverage (Massuda et al., 2018). The municipalities have an important responsibility in providing examples and alternatives to innovation and the health system's governance.

3.3.2 The local health system

The municipality of Florianópolis has long been recognised for the quality and coverage of its primary care system, which is based on the ESF model (Conill, 2002; Giovanella et al., 2009; Tesser and Poli Neto, 2017; Vidal et al., 2018). The city is a state capital of around half a million inhabitants in one of the most developed regions of Brazil. The local health system is governed by the Municipal Health Secretariat and comprises 49 PC clinics, a range of specialised outpatient services (medical specialities, acute and emergency, mental health), and three hospitals which are managed by other health authorities (federal, state or private contracted). In each PC clinic work one to six ESF teams with family physician and nurse. All city residents, even if covered by private insurance, are assigned by home address to one of the PC clinics. All municipal services have electronic health records systems, and they are organised in four health districts to facilitate access and management[2]

Florianópolis was the first capital to achieve universal primary care coverage in 2015, based on the Ministry of Health's parameter of one primary care team to every 3,450 inhabitants[3]. The city received Ministry of Health awards for innovations implemented in the last decade in primary care and other areas like mental health and planning (Saraiva and Cremonese, 2008; Brasil, 2013). In 2013, more than 90% of the primary care teams received a positive evaluation in the Ministry of Health's national accreditation programme (Santos, 2016).

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[2] Information from the website of the Municipal Health Secretariat, Florianopolis. Available from: **http://www.pmf.sc.gov.br/entidades/saude/**. Accessed in 31/12/2019.

[3] Information from the website of the Municipal Health Secretariat, Florianopolis. Available from: http://www.pmf.sc.gov.br/entidades/saude/. Accessed in 31/12/2019.

However, like in the national level, political and financial problems have challenged the gains in coverage, access and quality. The city expanded primary care services rapidly with limited resources, which led to shortcomings in staff and physical structure. The institutional drive to expand the provision of care was reflected over the practitioners in the form of pressure for results, overwork, and stressed relationships with line managers, what resulted in high levels of sick leave and burnout which in turn reinforced the overwork. As a result, defensive attitudes emerged in the form of bureaucratic barriers to the access of patients (Zepeda et al., 2013b). The impact of such bureaucratic barriers in the health system's performance was demonstrated by Vidal et al. (2018), who assessed the presence and extent of the attributes of primary care in Florianópolis using the Primary Care Assessment Tool, a validated instrument. They collected data from eleven clinics in 2012, when the innovation process described in this study had just started. Both the highest and lowest scores were for the dimension access, in the subdimensions of utilisation (higher) and accessibility (lower), respectively. This apparent contradiction suggests that although the population did use the services, they might have had trouble to access what they needed when they needed. This was the contradictory institutional context in which the innovations described next were developed, and where the opinion leaders' strategy emerged.

3.3.3 Innovations in access and continuity of care

Florianópolis has developed in the last decade innovations to improve access, teamwork, and continuity in primary care. These innovations were developed with the contribution of local staff and implemented through participatory strategies. Two innovations developed during this process were advanced access and nursing protocols. I selected these two innovations which characteristics are in table 3.2 to reconstruct and analyse the roles of opinion leaders in this study.

Table 3.2 Characteristics of advanced access and nursing protocols

	Advanced access	Nursing protocols
Short description	Scheduling model that offers patients appointments when they need, usually in up to two days, regardless of the reason for the visit.	Evidence-based clinical guides that have legal force to allow task-shifting from doctors to nurses of activities like prescribing and ordering tests.
Key features	Same-day appointments; Maximum waiting times for appointments; no differentiation between urgent and non-urgent appointments.	The Recommendations synthesise local policy and evidence-based national guidance and are backed by professional councils.
Evidence base	Advanced access improves access and continuity in primary care through the reduction of waiting times and no-show rates (Rose et al., 2011).	Nurse prescribing effects on patient outcomes are similar or better than those of medical prescribing (Gielen et al., 2014; Weeks et al., 2016).
Local adaptations	Nursing appointments; E-mail and phone scheduling; administrative roles for community health workers; maximum waiting times of up to five days.	Protocols are integrated within a framework for nursing practice which includes guidance on diagnostics and recording.
Status in 2017	Adopted in varying degrees in most clinics, reducing waiting times for appointments; Integrated into planning and monitoring tools, technical guidance, and policy documents.	Adopted by most nurses; increased nurse participation in clinical practice; five protocols published; adoption in the state-level backed by the professional council.

Source: Zepeda et al. (2013a); Zepeda et al. (2013b); Siqueira (2014); the website of the Municipal Health Secretariat of Florianópolis; my experience.

These innovations were selected based on lasting relevance to the local system as inferred by the presence in institutional news, continuity across political changes, and integration in policies (Secretaria Municipal de Saúde de Florianópolis, 2015; Secretaria Municipal de Saúde de Florianópolis, 2016). These criteria were defined to maximise the chances of engaging participants, identifying relevant data, and improving the use of the findings. The other criterion

was the relevance of opinion leaders in the implementation process (Zepeda et al., 2013b).

Advanced access is a patient-centred scheduling model that offers patients appointments when they need, usually in up to two days, regardless of the reason for the visit (Murray and Berwick, 2003). In Florianópolis, the model was adapted to reflect local practice, e.g., by assigning roles to community health workers and including nurses' appointments. Practices that implemented advanced access offered a minimum of 50% of same-day appointments and had wait times of one to five business days. Key tenets of the model like same-day appointments and maximum waiting times have been integrated into local policy since 2015.

Advanced access is an evidence-based innovation. One systematic review has shown it could be a cost-effective intervention to reduce waiting times and to improve access and continuity in primary care (Rose et al., 2011). In Florianópolis, it was associated with improved access to primary care, as shown by a cross-sectional study which correlated scheduling models, including advanced access, and performance of the PC clinics. The performance was better in clinics with advanced access, defined as up to two days of wait and over 65% of same-day appointments, then those with longer wait times (Vidal et al., 2019).

Nursing protocols are normative documents which guide and expand the roles of nurses in clinical care to include prescribing, test ordering and referrals. Increases in the participation of nurses in clinical care have been associated with improved access and efficiency of primary care (Vitali Miclos et al., 2017). However, a restrictive legal framework and an excess of administrative responsibilities have limited the clinical roles of primary care nurses in Brazil (Feliciano et al., 2010). In Florianópolis, the protocols were part of a new framework for nursing practice implemented by a municipal Nursing Committee. The protocols which were published up to 2019 covered cardiovascular and metabolic diseases, women's health, infectious diseases, acute & emergency care, childcare and wounds.

Fewer assessments of the nursing protocols have been made if compared to advanced access. One monograph assessed how nursing protocols contributed to the nursing care of people with diabetes mellitus, based on interviews with clinical nurses. This study showed that the protocols had good acceptability and improved professional autonomy, but their benefits may be limited by an excess of patients and limited awareness beyond the organisation about the clinical role of nurses (Lauterte, 2018)

Monitoring data from the electronic medical records database in Florianópolis suggest improvement in access and the clinical roles of nurses over the period

covered in this study. Concerning access, the percentage of the resident population seen in a year increased from 30% in 2010 to 43% in 2017; and the proportion of patients seen by a doctor in less than two days raised from 35% in 2010 to 48% in 2014, remaining stable between 2014 and 2017. These indicators were targets of advanced access (Andrade, 2018). Monitoring of the nursing protocols, although more recent, also showed improvements compatible with the innovation targets. There was a 30% increase in the treatment of syphilis (a re-emergent public health problem in Brazil) between 2016 and 2018 which was driven by a twice-fold increase in nurses´ prescription of antibiotics covered in the protocols. When compared to doctors, nurses now account for the majority of treatments provided for syphilis (Pedebos, 2018). Although other interventions and contextual factors are likely to be involved in such changes, the positive numbers encourage systematic investigations about interventions introduced in this period.

I reconstructed the innovation's journey from 2011 to 2017, just before data collection for this study took place. I reviewed the journey of the innovations with focus on the individuals (who were the relevant actors of the process); their relationships (how they related and interacted with each other and the broader staff); and the implementation strategies (how the opinion leaders were engaged in promoting the innovations) (Damschroder et al., 2009). Table 3.3 shows implementation milestones of the two innovations.

Table 3.3 Antecedents and implementation milestones of advanced access and the nursing protocols

Institutional antecedents	Implementation milestones
• Municipal health authority takes on full management of the local health system and adopts the ESF model of PC; managers with clinical background accept strategic posts (2005-07) • First municipal primary care policy issued, already covering access strategies and professional roles (2007) • First regional meetings and events to discuss access barriers and local innovations (2008-10) • Primary care coverage reaches 75% of the population (2011)	**Advanced access** • First local experiences of advanced access (2009-10) • A showcase of early experiences in the Access Workshops (2011-12) • Production of guidelines and policy documents in workgroups (2013-14) • Inclusion of advanced access in plans, monitoring panels, and new policy (2015-2016) • Implementation of appointment by email and WhatsApp **Nursing protocols** • Creation of the Nursing Committee which responsibilities included implementing the nursing protocols (2013) • Validation of the protocols in regional meetings with clinical nurses. Clinical-level implementation (2014-15) • Publication of the first protocols; organisation-wide training workshops (2015) • Adoption of the protocols in the state level and involvement of the Nursing Committee in training other cities (2016)

Source: Zepeda et al. (2013a); Zepeda et al. (2013b); Siqueira (2014); the website of the Municipal Health Secretariat of Florianópolis; my experience.

The two innovations had similar goals. Both aimed at improving the efficiency of primary care teams and facilitating access of patients to care. Advanced access predicted enhanced clinical roles for nurses which were further made possible by the nursing protocols (Zepeda, 2016). On the other hand, the two innovations differed in aspects like priority targets (doctors in advanced access, nurses in the nursing protocols) or complexity of the innovation (advanced access requires changes in professional roles and team dynamics, while nursing protocols can be just embedded within the usual clinical practice).

3.3.4 A participatory shift in local management

Here I describe some features of the management in the study setting, to facilitate understanding of the role, position and relationships of opinion leaders and programme designers. Most of the facts and assumptions in this subsection drew on my experience in the setting.

In Florianópolis, changes in management and implementation strategies occurred during the period covered in this study. In the late 2000s, the municipal health system expanded, and new services and responsibilities were assumed by the municipal health authority (Giovanella et al., 2009). A new generation of managers with clinical background assumed strategic positions in the organisation. Primary care managers wanted to promote closer collaboration between managers and practitioners. Participatory management strategies were implemented, like regular team meetings in each clinic, and on-site supportive supervision by middle-managers.

The opinion leaders' strategy emerged as part of this participatory shift. It was conceived and implemented by the same managers who were responsible for the routine commissioning of primary care services. These were defined as programme designers in this study. They identified and engaged opinion leaders in the innovation projects and supported them as part of their duties. These managers had experience in the local system, personal relationships with many practitioners, and good knowledge of local barriers and the networks of communication and influence. Some had been opinion leaders themselves before moving to management. (Zepeda et al., 2013a; Zepeda et al., 2013b).

There were distinct levels of management in the organisation, from senior managers with political responsibilities to practice-level managers responsible for local provision of clinical care. Position in the organisation is distinct from the role in the programme; distinct managers functioned as programme designers, opinion leaders or target individuals in this programme. The programme designers were senior managers, who reported to the health secretary, or middle-managers, which had an important role in translating organisational goals into practical activities (Engle et al., 2017). Lower-rank managers in charge of primary care clinics were more likely to be identified in this study as opinion leaders or target individuals. Lower-rank managers work in the frontier between the managerial and clinical worlds and need to learn how to reconcile conflicting identities and affiliations (Spehar et al., 2015). Table 3.4 describes the types of managers in the study setting and their potential roles in the programme.

Table 3.4 Types of managers in the study setting, characteristics, and their roles in the programme

Type	Characteristics	Roles in the programme
Practice managers	In charge of the clinic in which they work. The lower-rank managers. Members of clinical teams with part-time clinical practice.	Target individuals Opinion leaders
Project managers	In charge of a project or technical area. Placed on the central administration but subordinate to other managers and without direct power over the clinical staff.	Opinion leaders Programme designers
Middle managers	Part of the management team of the health district in which they work. Hands-on managers who share lower- and higher-rank features, e.g., frequent contact with clinical teams and political representation.	Opinion leaders Programme designers
Senior managers	In charge of major components of primary care provision. Placed on the central administration. The higher-rank managers. Decision-making and political duties.	Programme designers

Source: Zepeda et al. (2013a); Zepeda et al. (2013b); Siqueira (2014); the website of the Municipal Health Secretariat of Florianópolis; my experience.

3.3.5 The opinion leaders' strategy in Florianópolis

The opinion leaders' strategy emerged within the context of organisational innovation and participatory management just described. It was not defined as a programme by the programme designers at the time of its use. I retrospectively labelled it as a strategy (or programme, for the purposes of this study) based on my perception of a common rationale which related to opinion leadership. The key assumption of the programme designers was that involving credible practitioners in the implementation of innovations would increase the engagement of the staff with change (Zepeda et al., 2013a; Zepeda et al., 2013b; Siqueira, 2014). The programme designers did not use the term opinion leaders, instead referring to those credible practitioners as collaborators, supporters, or simply clinicians. They expressed key characteristics of opinion leaders described in chapter 2: embeddedness in local groups, credibility among colleagues, and perceived influence.

In general, the opinion leaders had experience with the innovations, demonstrated interest and knowledge in the topic, and were willing to contribute to implementation. Most were doctors and nurses of the ESF clinical teams; a few were local- or middle-managers. Their identification occurred over the years and according to emerging needs of the managers. The responsibility for their identification and recruitment was of primary care managers in charge of specific innovations. They usually asked for the advice of middle managers who had personal knowledge of the practitioners. The assigned roles of the opinion leaders were usually informal, on top of other work duties, and focused on tasks, e.g., presenting their experience in meetings, or contributing to produce a document.

The initial milestone of using opinion leaders to promote change at the municipal level was a cycle of access workshops held between 2011 and 2012 (Zepeda et al., 2013b). In those workshops, doctors from the first teams that implemented advanced access were invited by the primary care managers to showcase their experiences to all other municipal teams. After the workshops, these doctors and other practitioners and managers who demonstrated interest in advanced access were invited to join workgroups which defined implementation guidelines and monitoring indicators to advanced access. As a manager at the time, I was involved in this selection and recruitment process, which was quite informal. A small group of senior and middle managers agreed on a list of names built over a brainstorming meeting and email exchange. There were three loose criteria, all based on our perception. The opinion leaders should have experience and interest in the innovation topic, be popular among colleagues, and show a willingness to collaborate with implementation.

The opinion leaders of advanced access were invited to showcase their experiences, produce guidelines and other tools for implementation at scale, and informally persuade and support colleagues (Zepeda et al., 2013a; Zepeda et al., 2013b). They received no training, and their contribution was mostly self-directed, except temporary assignments like leading a workgroup, in which they needed to report to managers. As implementation progressed, some of the first opinion leaders moved to management, and new leaders emerged from local experiences. The initial advanced access model was developed over the years, incorporating changes like phone and email contact with patients, and use of community health workers in triage roles.

The opinion leaders of the nursing protocols had a distinct profile. They were representatives of the diverse sectors of the organisation, nominated to a committee which oversaw implementing the protocols. The committee was responsible for writing the protocols in workgroups which included opinion

leaders; validating the protocols in peer meetings, and training colleagues to use the protocols. They usually received instruction and ongoing support from the head of the committee (Siqueira, 2014; Lauterte, 2018). As implementation progressed, informal opinion leaders in each clinic were identified by the committee leaders to persuade resistant colleagues; their influence was usually informal and limited to their clinics, based on local example and discussion in team meetings. Despite the distinct trajectories of the innovations, some professionals were opinion leaders for both innovations, in particular nurses from the first clinics to implement advanced access that also adopted the nursing protocols.

Across the two innovations, the main activities of the opinion leaders were:

- Contribution to producing innovations, e.g., adapting protocols, guidelines, or monitoring tools.

- Provision of examples of innovation adoption, e.g., presenting their experiences in events or peer meetings.

- Informal persuasion and peer support, e.g., discussion about the innovations in peer meetings or mailing lists.

Table 3.5 compares some characteristics of the opinion leaders across the two innovations. Table 3.6 describes the programme based on a framework for reporting implementation strategies mentioned in chapter 1 (Proctor et al., 2013).

Table 3.5 Characteristics of the opinion leaders

Characteristics	Advanced access	Nursing protocols
Background	Mostly doctors, few nurses	Only nurses
Work position	First all practitioners, further some recruited to management positions.	Both practitioners and managers, from primary care and other areas.
Profile	Innovative practitioners recognised for local innovation and contribution to the dissemination of these innovations.	Two groups: professionals acknowledged as exemplary between peers (committee members); enthusiast individual adopters.
Selected by	Primary care senior- and middle- managers.	Project managers - the nursing committee leaders.
How they were engaged	Emerging from local innovation; some were further assigned formal roles or positions.	Members of a formal committee; informal support to colleagues in the clinic level.
Assigned tasks	Disseminating their experiences in events and meetings. Leading workgroups to produce guidelines and monitoring tools. Persuading and supporting close peers,	Producing and validating the protocols. Providing training and monitoring the use. Persuading and supporting teammates to use the protocols.
Relevant moments	Presentations in access workshops (2011-12); workgroups of the Municipal Health Forum (2013-14); contribution to policy documents (2014-17)	Participation in the nursing committee (from 2013); production of the protocols (from 2014); validation and training workshops (2014-17)

Source: Zepeda et al. (2013a); Zepeda et al. (2013b); Siqueira (2014); the website of the Municipal Health Secretariat of Florianópolis; my experience.

Table 3.6 Description of the programme

Domain	Strategy: engagement of opinion leaders in supporting innovations
The actor	Local practitioners who are credible among peers and willing to collaborate with managers in implementation identified and 'activated' by the programme managers
The action	Managers acknowledge and assign responsibilities to opinion leaders; opinion leaders contribute to production and adaptation of innovations, share their experience with the innovation, persuade others in informal networks, advise and support peers to overcome concerns and barriers
Targets of the actions	Practitioners who have not adopted or just adopted the innovations; local managers; the inner setting (implementation climate)
Measurable outcomes	Beliefs, attitudes and behaviour of practitioners concerning the innovations
Temporality	Opinion leaders should be involved at all stages of implementation, including design of the innovation, pilot adoption, introduction to the staff, implementation in routine practice, sustained use
Dose	Formal actions according to the needs of the implementation process, informal actions ongoing and/or according to the needs of target individuals
Implementation outcomes	Acceptability, adoption, and sustainability of innovations
Justification	Research that suggests opinion leaders are effective in changing professional behaviour (Flodgren et al., 2019); innovation diffusion (Rogers, 2003), social learning (Bandura, 1977) and social influence (Mittman et al., 1992) theories.

Source: Template adapted from Proctor et al. (2013); content from Zepeda et al. (2013a); Zepeda et al. (2013b); Siqueira (2014); the website of the Municipal Health Secretariat of Florianópolis; my experience.

Last, the logical counterpart to the opinion leaders were the non-opinion leaders or individuals targeted by the programme. The target individuals were the ordinary practitioners, not especially innovative or influential; and the practice managers, which had a strategic facilitator role in the clinic level for their control of resources, work routines and proximity to the clinical teams. The opinion leaders mostly focused on persuading doctors and nurses like them, but also interacted with the other professionals of the ESF teams. The target individuals should be receivers of the programme, similarly to patients in clinical

interventions. In the literature of opinion leadership, they are opinion followers or potential adopters.

The main differences between target individuals and opinion leaders were the degree of interest in, and involvement with the innovations; the consequent proximity to the managers responsible for the innovations; and the expected influence over colleagues. All should be higher among the opinion leaders. However, these differences were circumstantial and changed over time. For example, target individuals initially reluctant about adopting the innovations became opinion leaders with the progress of implementation, while opinion leaders moved to management and became programme designers. A few programme designers with clinical background were also opinion leaders. Moving back from management to the clinical work was less frequent.

3.3.6 Summary and key terms

In the previous sections, I outlined features, achievements and challenges of the national and local health systems in which the study took part; described the innovations and the institutional context within which the programme emerged; and summarised the opinion leaders' strategy (programme). Based on the reconstruction of the innovations' journey, I defined three groups of relevant actors which will be the categories of participants of this study, set out next.

- Programme designers. The managers who developed the innovations and identified and engaged the opinion leaders in its implementation (I was one of the programme designers).

- Opinion leaders. The doctors and nurses who were involved formally or informally in implementation of innovations in Florianópolis, including opponent leaders (actors who embodied the programme).

- Target individuals. The practitioners who should be influenced by the opinion leaders.

Some terms initially defined in chapter 1 will be used throughout this thesis to refer to specific circumstances of the study setting, as follows.

- Innovations. New frameworks for clinical practice introduced in the primary care system of Florianópolis (advanced access and nursing protocols), including guidance (e.g., access guidelines) and resources (e.g., monitoring or registration systems).

- Implementation. The process of change put in place by management to have those innovations adopted by the clinical teams in Florianópolis,

> including implementation strategies (e.g., the opinion leader's strategy, supportive supervision) and activities (e.g., the access workshops).

- Intervention or programme. The strategy of mobilising opinion leaders to influence practitioners to adopt innovations (opinion leaders' strategy = the programme).

The distinction between implementation, innovation and intervention is highlighted because this study adopts a counter-intuitive framing in which the intervention is one of the strategies used to promote innovations, within a broader implementation process. A similar position was adopted in a review of facilitation strategies in healthcare settings in which implementation strategies were considered as innovations used to influence the implementation of other innovations (Cranley et al., 2017).

3.4 Realist evaluation

This study is a realist evaluation, on the perspective of Pawson and Tilley (1997). Realist evaluations are particular types of theory-driven evaluations, and as such are systematic attempts to explain how a programme cause its outcomes (Chen, 1990), and why programmes work or fail to work in distinct contexts (Astbury and Leeuw, 2010). The objects of theory-driven evaluations are not the programmes, but the ideas or theories which underpin the programmes. Realist researchers understand programmes as theories incarnated (Pawson and Tilley, 1997).

Realist evaluation differs from other theory-driven approaches in terms of ontology, epistemology, and methodology for being rooted in a realist philosophy of science and social science. Realism is the principal post-positivist perspective of scientific explanation, in between empiricist and constructivist accounts (Pawson, 2006b). Realists consider that a real world exists apart from our understanding of it, thus constraining the interpretations that can be done of it. The observable phenomena of the social world are underpinned by mechanisms that, although usually hidden, are real (Pawson, 2013).

Some authors argue that realist studies may be ontologically realist but accept various degrees of epistemological and methodological relativism. This position in part arises from the frequent use of methods which are strongly associated with constructivist studies, e.g. in-depth interviews (Manzano, 2016; Brousselle, 2018). However, realists differ from constructivists in terms of seeing data not as constructions, but as evidence used to make inferences about the nature of real social processes. The theoretical claims obtained through realist evaluations are,

therefore, expected to represent knowledge of the real world (Pawson and Tilley, 1997).

Diverse fields of inquiry have applied realist inquiry, e.g., law, history, management, psychology, and evaluation research. The main schools are the critical realist, which draws on realist philosophy of science (Bhaskar, 1975) and a second stream represented by efforts to develop realism as an empirical method for the social sciences, which is variably called scientific, empirical, or emergent realism and is where realist evaluation sits (Pawson and Tilley, 1997; Mark and Henry, 1998a; Pawson, 2013).

The studies described in chapter 2 have a lot to say about the nature of opinion leaders, their effects, and potential effect modifiers. A realist approach can advance in the formulation of theoretical hypotheses about how potential mechanisms interact with specific context configurations to explain distinct outcomes, thus guiding the development and evaluation of better opinion leaders' interventions. Next, I will outline the premises of realism that underpinned this study in terms of ontology (the nature of the world), epistemology (the nature of our knowledge of the world), and methodology (implications of such assumptions to research).

3.4.1 Ontology and epistemology

First, realists understand that there is a world apart from our knowledge of it. Both material objects and social processes are real 'things', that can cause effects in the world. Thus, programmes and policies are real, and so are the social institutions and constructs which have effects on the programmes (Westhorp, 2014).

Second, our knowledge of the real world and its objects is constrained by our apparatus, our brains, and thus will always be incomplete and provisory. 'We do not know: we can only guess' (Popper, 2005, p.278). However, we can get closer and closer to the real objects of the social world because their nature constrains the interpretations that we can make of them. Therefore, evaluations can cumulate and improve knowledge on how programmes work (Pawson, 2013)

Third, the realist understanding of causation is generative, in contrast to successionist. A successionist model of causation understands that causality is determined by the empirical uniformity of an association or the regular success of events. If B follows from A certain number of times, then B is probably caused by A. In the generative model, what causes something to happen is not related to the number of times we observe it happen (Sayer, 2000, p.14). Instead, it is

our theories that should make sense of the observable regularities, by unveiling the processes underlying the observable patterns of social life. These underlying processes are generative mechanisms. They are propositions that explain what it is about a given social system, or social programme, that makes things happen (Pawson, 2006b). Therefore, mechanisms are causal powers and liabilities within social systems, which are activated under specific circumstances to produce observable effects. Understanding generative causation is the core of realist explanation.

Fourth, social systems are open, complex, stratified. Social systems are the product of endless forces, e.g., historical, institutional, psychological; they interact and influence each other, and they change over time. Also, actions in one level of the system cause effects in other levels, which in turn contribute as contexts for further changes. Outcomes emerge from interactions within and across programmes rather than by the effects of single programmes. Evaluations are also social systems; the research act tends to disturb that which is being described (Pawson, 2006b). Evaluations can only show if a programme contributed, always among other factors, to an outcome (The Rameses II Project, 2017a). The consequence of such open nature of the social world is that any explanation will always be incomplete and partial. Knowledge should cumulate through adjudication of explanatory accounts across studies.

Fifth, as social systems are open, social change is emergent. Society is in permanent self-transformation (Archer, 1995). The social order depends on people's choices and action, which are conditioned by pre-existing structures, norms and opportunities; the choices, in turn, reshape those structures, changing the conditions for new choices. Social programmes are a kind of social change; they are interventions to alter the course of ongoing social processes, or to change the course of change. The effects of programmes can never be explained by the work of any single individual, but rather by the interplay between individuals and institutions, agency and structure.

Distinct answers to the challenges presented to social researchers by the open nature of social systems have been regarded as the schism that divides critical realism and scientific realism (Pawson, 2006b). While critical realists would answer to the complexity with a critical exercise of choosing the better explanation, scientific realists would answer with empirical testing and adjudication between alternative explanations, or theories. Such a statement is the oversimplification of an open debate. For example, some authors have criticised Pawson's account of critical realism and consequently downplayed the differences between the two perspectives (Porter, 2015b; Porter, 2015a).

However, I acknowledge this distinction to sit this study in a research tradition based on empirical and cumulative testing of theories.

3.4.2 Methodology and methods

Realist approaches assume that programmes will never work in the same way across settings, time, or participants. Instead of controlling for such variation, realist research seeks to explain it. Rather than asking if a programme works, realist evaluation asks what it is about a programme that works. The general research question is how a programme work (or do not work), why, for whom, and in what conditions.

I have argued that social programmes are open systems in constant change, moved by the interplay of agency and structure. Consistently, programmes produce change by introducing new ideas or resources into existing sets of social relationships. They seek to influence the course of change by affecting the choices of the subjects (Pawson, 2013). They work through the reactions of participants to new ideas or resources introduced in their contexts (Pawson and Tilley, 1997). Previous social structures condition their choices. Once the choices are applied, they change those structures, conditioning new choices for new subjects. Therefore programmes, like society, are reshaped continuously but do not follow the wishes of any particular actor (Pawson, 2006b).

 Realist evaluation starts by clarifying the programme theories, or assumptions about how a programme contributes to outcomes. It depends on the observation of a range of outcomes to allow exploration of the related causal pathways (Pawson and Tilley, 1997). Therefore, some authors think that programmes that are more suitable for realist evaluation are those that seem to work, but which underlying processes or enabling circumstances are not yet fully understood (Westhorp, 2014).

Outcome patterns

Realist evaluations seek to explain outcomes patterns (Pawson, 2006b). It is the totality of outcomes that matters – successful and unsuccessful, intended and unintended, expressing short, medium and long-term changes. Realist evaluations look into outcomes and impact differently from how trials do (Westhorp, 2014). Instead of saying if a given programme works or not, a realist study will usually build a range of explanations about the circumstances in which a programme work, and the reasons why it does not work in other instances

Some authors have advocated for the integration of realist principles in trials and process evaluations of complex interventions to help explaining variable findings (Fletcher et al., 2016).

Mechanisms

Realist evaluation seeks to detect and explain the mechanisms within social programmes which are related to observed outcome patterns (Pawson and Tilley, 1997; Mark and Henry, 1998b). Mechanisms in realist evaluations are underlying processes which explain the change, rather than variables or structures. They are propositions (Pawson, 2013) about how programmes cause their effects, based on interactions between the programme activities, participants' agency, and contextual influences (Marchal et al., 2013; Lacouture et al., 2015). Causal explanation in realist evaluation departs from an acknowledgement that programmes work selectively (Pawson, 2006b); the same programmes will work differently in different conditions, moments, and for different individuals.

Key features of mechanisms were defined by Astbury and Leeuw (2010) and Lacouture et al. (2015). I draw upon these authors to examine characteristics that were important for this study.

First, mechanisms are hidden, non-observable, but real. Therefore, they frequently need to be 'guessed' based on the best available evidence and then tested and successively refined through empirical triangulation and repeated inquiry. They are invisible in part because they usually produce effects in levels of the system distinct from where they operate (Westhorp, 2012), e.g. they act on a psychological level to produce institutional effects. Thus, despite usually hidden, they can be causally associated with observable effects.

Second, mechanisms are contingent on the context. They are conditional to particular contexts, what is not to say that they are necessarily bound to specific contexts, but rather that they are sensitive to variations in context, as well as in other mechanisms. Therefore, they should always be analysed in articulation with the context conditions that are responsible for their activation.

Third, mechanisms generate outcomes by articulating agency and structure. It is the response of agents to new resources and opportunities introduced by a programme that produces change. Therefore, mechanisms are always hypotheses about the interplay between resources and reasoning, capacity and choice, or structure and agency, in constituting observed regularities.

Fourth, mechanisms evolve and operate within open social systems in constant self-transformation (Archer, 1995). Therefore, mechanisms interact not only with

the context and other mechanisms but also with effects that they generate in the system. They can also change into other components of realist explanation, e.g., a mechanism in one theory can be context activating the mechanism in another theory.

The operationalisation of the concept of mechanism has been a challenge for realist evaluators in health systems research (Marchal et al., 2012). Aspects of this problem include difficulties for differentiating between mechanism and context (Byng et al., 2005), and between mechanism and intervention (Marchal et al. , 2010). One useful solution has been proposed by Dalkin et al. (2015). They suggested disaggregating the mechanism in its 'resources' and 'reasoning' components, which would help to differentiate mechanisms from both the context and the intervention. Additionally, they also suggested a model of 'dimer' activation of the mechanism, instead of 'on/off' triggering, what would better accommodate an evolving relationship between the agency of the programme subjects and a changing context.

The use of mechanisms to articulate causal linkages between the programme and its outcomes may contribute to a cumulation of knowledge about 'families of programmes' – for example, programmes based on building trust, role modelling, etc. Mechanisms are the transferable building blocks of programme theories, working across programmes and policy domains (Astbury and Leeuw, 2010; Marchal et al., 2012).

Context

Context is a concept hard to operationalise, often underexplored or simplified in implementation studies, e.g., reduced to the institutional setting, or conflated with the programme. In realist evaluation, it comprises at least characteristics of (i) the individual actors, (ii) their interrelationships, (iii) the institutional setting, and (iv) the broader infrastructure (Pawson and Tilley, 1997). Other definitions have highlighted the background and motivations of the individuals, the organisational resources and opportunities available for the programme subjects; the structure and culture of the services and the political and financial environment (Greenhalgh et al., 2009); and the social norms, group processes, and conventions of the local groups (Murray et al., 2010).

Context can influence programmes in different ways, for example, the institutional context can affect how a programme is implemented and the possible responses of programme subjects; the responses of the subjects can be affected by the availability of resources and by demographics or psychological characteristics; and so on (Westhorp, 2014). It is important to understand not only which elements

of the context are relevant to trigger a mechanism, but also how the context affects the mechanisms (Westhorp, 2018).

Organisational studies that proposed a notion of context as an active participant of change also informed the operationalisation of context in this study (Fitzgerald et al., 2002; Dopson et al., 2008). The authors of those studies rejected a definition of context as background to the change process and instead sought to redefine its role as an interacting element in change. They criticised views of context that do not consider the role of individuals in interacting with, mobilising and shaping context; or that considered context as formed by separate and static elements. I found their notion of conjuncture causation, or context configurations – distinct combinations of factors leading to the same outcomes - particularly compatible with realist explanation and useful for analysing my data.

External validity and generalizability

Theory-based studies are useful to advance the theoretical understanding of how and when an intervention works (Mackenzie et al., 2009). Realist evaluations, in particular, are deemed well-fitted to evaluate complex interventions where outcomes depend strongly on both individual's responses to the interventions and the wider context (Westhorp, 2012). The focus on analysing causal links between intervention, mechanism and outcome would improve the explanatory power (Marchal et al., 2010).

The emphasis of the evaluation on the programme theories and mechanisms as units of analysis is considered to improve the transferability of the findings, thus contributing to external validity. Instead of controlling for the context influence, realist evaluations analyse its contribution to the outcomes, turning the 'noise' into the subject matter of the evaluation (Marchal et al., 2012). The identification of the context elements that activate mechanisms contributes to external validity by allowing decision-makers in other settings to judge the fit of the findings to their settings (Marchal et al., 2010).

Programme theories and CMO configurations

Programme theories are models or theoretical accounts of how a programme leads to its outcomes. They assume diverse forms in the literature, and usually contain some expression of programme components (functions, strategies or activities), intended outcomes, and underlying causal processes (Coryn et al., 2011). Pawson and Tilley (1997) proposed that a realist evaluation starts and

ends with a middle-range theory, which is a formulation of social theory in a level which allows empirical testing.

Realist programme theories distinguish from other approaches commonly used to describe programme theories, like logic models (W.K. Kellogg Foundation, 2004) or theories of change (Anderson, 2005), in terms of the emphasis in explaining causality. To show the difference, I draw upon the distinction between implementation theory, which refers to the hypothesised links between a programme's activities and its anticipated outcomes, and programme theory, which refers to links between the mechanisms of a programme and the outcomes (Weiss, 1995; 1997).

Logic models are usually schematic descriptions of how the programme inputs, activities, outputs and outcomes fit together, and they put little emphasis in explaining causal relationships (Davidoff et al., 2015). They fit within the description of implementation theories. The Theory of Change approach, although acknowledging the importance of the causal programme theory, in practice has been more applied as a tool for developing interventions, agreeing on implementation and evaluation plans, and promoting stakeholders' engagement (Blamey and Mackenzie, 2007; De Silva et al., 2014). Realist programme theories, in contrast, have its focus on explaining the causal links between the elements described in the other approaches (Blamey and Mackenzie, 2007).

Programme theories are specific to a given programme and setting, and as such, they are distinct, in terms of abstraction and applicability, from the more generic social sciences theories (middle-range and grand theories). Grand theories are highly abstract forms of theorising which aim to explain general phenomena across the social world. Middle-range theories (MRT) are a solution to allow the empirical testing of social theories. They apply to a conceptual range which is more limited but broader than that of a single programme, having validity across settings and policy areas. They are close enough to observed data to be incorporated in testable hypotheses but involve a fair degree of abstraction. They are compatible with diverse formal or grand theories which are themselves discrepant, functioning as an operational solution to allow theory testing in social science, and building blocks towards more general formulations (Merton, 1968).

In realist evaluations, there is a place for common-sense, or 'folk' theories in explanation building, in particular, the assumptions of programme stakeholders about how a programme is supposed to work (Pawson, 2013). The task of the evaluator is to identify and explain the circumstances under which those folk theories hold or not. Similarly, the experience and insights of the evaluator are

integrated into the theorising. Realist evaluators are encouraged to use their expertise, common sense, imagination to postulate, or 'make-up' mechanisms which will then undergo rigorous testing and refining. Such methodological guidance is based on a belief that causation cannot be understood only based on observable evidence, if not because mechanisms are usually invisible (The Rameses II Project, 2017b; Williams, 2018).

Realist evaluations use a heuristic formula to identify generative causal pathways, the Context-Mechanism-Outcome configuration (CMOC). The CMOC is an operational solution to produce testable propositions based on the basic realist assumption that 'causal outcomes follow from mechanisms acting in contexts' (Pawson and Tilley, 1997, p.58). Some alternative heuristics have been proposed, e.g. ICMO (adding intervention) (Punton et al., 2016) or ICAMO (adding intervention and actors) (Marchal et al., 2018), but all serve the same purpose of assembling data in working hypotheses which express generative causation.

The CMOC has a proposition-building function and can be used in all stages of realist evaluations, e.g., to formulate initial hypotheses, or to describe findings. Commonly, multiple CMOCs are generated, modified and discarded across one single evaluation. The term 'configuration' in the CMOC helps to remind that its use should not be an exercise of labelling and listing disconnected Cs, Ms and Os (Pawson, 2013). The three categories are not clear cut, but rather contingent upon each other; they assume their meaning from the function in explanation, in specific moments of the evaluation. The evaluator must find out which specific combinations of these elements work better in the explanation building (Pawson, 2013; Westhorp, 2018).

The distinct types of theory in realist evaluation are in table 3.7.

Table 3.7 Types of theories

Type	Definition	Example
Grand theories	General explanations of the social world	Social action theory, structuralism
Middle-range theories	Intermediate theories in terms of abstraction which allow empirical testing	Diffusion of innovations, reference group theory
Programme theories	Theoretical models to explain specific programmes	Logic models, theories of change
'Folk' theories	Stakeholders' ideas about how a programme work	Proverbs, common-sense
CMO configurations	Working hypotheses developed in evaluations	If (context) is in place, then (a mechanism) will lead to (outcome)

Source: Adapted from Davidoff et al. (2015) and Marchal et al. (2010)

Mixed methods and sources of evidence

Realist evaluations, by excellence, are pluralists in terms of methods and avoid a hierarchy of value between distinct methods or sources of evidence. Both quantitative and qualitative approaches can be used, and mixed methods are recommended. The methods should be chosen according to the questions of the study, initial programme theories, and capacity to obtain data to test and refine such theories. The inherent value of a given method or data source is replaced by the utility of the insight which the data can provide (Pawson, 2006a).

In practice, any sources can be used to elicit the initial theory, like literature review, observation of the study setting, conversation with programme staff, analysis of documents, exploratory interviews. Usually, a combination of stakeholders' knowledge and formal theories are used. Administrative data is also a useful source of information to hypothesise about distinct outcome patterns (Manzano, 2016). The use of previous studies and social science theories alongside data provided by stakeholders allow a plausibility check of common-sense programme theories (Marchal et al., 2010).

The evaluation then proceeds with the choice of data collection methods and the design of instruments. The CMOC is generally used to organise and analyse the data and search for patterns of generative causation. The CMOC generated upon the data are then compared with the initial theory and articulated with previous knowledge on the programme and social theories (again) to generate the refined theory.

Relating to the types of theory just described the initial theory in realist evaluation is generally of the middle-range because it is a generic and testable hypothesis of how the programme leads to its effects. The more granular working hypotheses which emerge during data collection and analysis are assembled as CMOCs. While the CMOCs are more directly connected to the data and refer to the programme at issue, the refined theory is built upon articulation of these CMOCs and previous knowledge on the programme, and as such is a middle-range theory (Marchal et al., 2010).

3.5 Study design

This study evaluated an implementation strategy used in a healthcare setting through developing, testing and refining programme theories about that strategy. The subject of the evaluation or programme in this study was the strategy of engaging opinion leaders in support of innovations within the primary care system of Florianópolis, Brazil, between 2010 and 2017. The goal of this strategy was to improve the adoption of innovations by the clinical staff, drawing on the social influence of opinion leaders over their colleagues. For this study, the opinion leaders' strategy was the programme. That programme was part of a broader, emergent and multifaceted change process which included other implementation strategies, e.g., supportive supervision. As an emergent programme, its reconstruction, described earlier in this chapter, was integral to the study.

The main focus of the evaluation was on the causal processes, although as a realist study, it naturally addressed those in articulation with outcomes and contextual determinants. I focused on analysing the roles of opinion leaders, or how they influenced the attitudes and behaviour of other practitioners about the innovations (Valente and Pumpuang, 2007). I did not focus on assessing the effectiveness of the programme, although data on programme outcomes were included in the findings.

The units of analysis were programme theories underpinning their roles, which approximately corresponded to mechanisms of change, e.g., building trust, modelling practices. As such, they were distinct from the tasks that were assigned to the opinion leaders in implementation, e.g., presenting experiences in workshops or adapting guidelines; these were the programme activities, resources, or components. To develop the mechanisms I used the 'resources and reasoning' approach, which dissociates the resources offered by the programme from the reactions of participants to highlight the role of human agency and distinguish mechanisms from context (Pawson and Tilley, 1997; Dalkin et al., 2015). For example, the examples of innovation adoption in

workshops (resource) are part of the programme, while the effects of such examples in reducing uncertainty and enhancing self-efficacy (reasoning) are a potential mechanism.

The study was operationalised in two stages, summarized in figure 3.1.

Figure 3.1 Study design
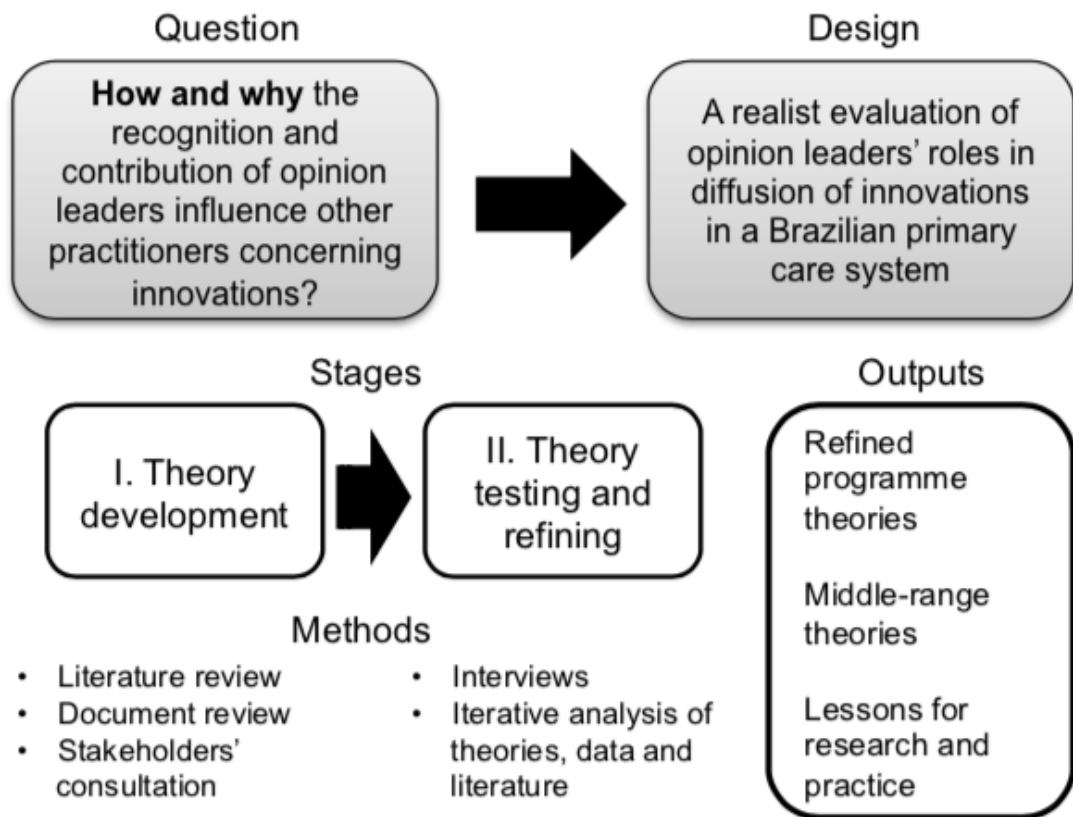
In theory development (stage 1), I gleaned initial programme theories from documents, exploratory literature review, informal stakeholders' consultation, and my experience with the programme. The main output of this stage is a set of initial programme theories. In theory testing and refining (stage 2), I tested and refined the initial theories drawing upon realist interviews with relevant local actors and a re-assessment of the literature. Theory testing and refining are described together because these processes were concurrent and based on a constant moving between data, literature and the programme theories. The main output of this stage is a middle-range theory abstracted from cross-analysis of refined individual theories.

Other realist evaluations in healthcare settings have followed similar stages. For example, Byng et al. (2005) evaluated a primary care programme for patients with long-term mental health illness. They initially identified CMOC elements from

a literature review, the initial description of the intervention, field notes and discussions between participants and research team, then used interviews to bring about the causal links and assemble CMOCs, and finally cross-analysed the CMOCs to generate a refined middle-range theory. The authors described this stepped approach as a transition process towards generalisation, from case-specific CMOCs to cross-cases CMOCs, to middle-range theories.

The data collection methods, specific outputs, and related objectives of each stage are shown in table 3.8.

Table 3.8 Data collection methods, expected outputs, and related objectives of each stage

Stage	Data collection methods	Outputs	Related objectives*
Theory development	Document analysis Literature review Stakeholders' consultation A recollection of my experience	Identification of relevant events and actors Initial programme theories	Describe the programme (1) Identify candidate theories (2) Develop, test and refine theories (3)
Theory testing and refining	Realist interviews with managers and opinion leaders Theory-driven assessment of literature	Refined programme theories Middle-range theory Considerations for policy and practice	Develop, test and refine theories (3) Synthesise middle-range theories (4)

* The numbers correspond to the objectives shown in table 3.1.

In the initial study plan, I had included the collection of administrative data on the innovations at the clinic level, e.g., same-day appointments and waiting times to assess adoption of advanced access, or nurses´ prescriptions to show adoption of nursing protocols. These data were intended to corroborate or challenge the remarks of the study participants and strengthen the evidence of outcome patterns explained in the programme theories. However, the reports obtained from the Florianópolis Health Secretariat (Andrade, 2018; Pedebos, 2018) were aggregated at the municipal level, or with short follow-up times. Therefore, I opted out for excluding analysis of administrative data from the study design.

Data analysis started alongside collection as it is usual in realist evaluations, which are iterative explanation-building processes (Greenhalgh et al., 2009;

Wong et al., 2012). The analytical framework was based on the evolving programme theories and the Context-Mechanism-Outcome configuration (CMOC) (Pawson, 2013). A combination of inductive and deductive reasoning with my experience and insights was used across the evaluation, what in realist literature is called retroduction (The Rameses II Project, 2017b). For example, the theory testing was both deductive, by confirming assumptions of the initial theories with empirical data, and inductive, by integrating new themes and causal processes into the initial theories.

Quality and reporting standards for realist evaluations have been published by the team of the RAMESES II Project. Such standards provide a useful framework for planning, conducting and reporting realist evaluations, and as such were observed in this study to ensure quality and external validity. I checked the design and methods against the quality standards for evaluators and peer-reviewers (Quality Standards for Realist Evaluation, 2017). The corresponding table is in the Appendices.

3.6 Stage 1: theory development

In this stage, initial programme theories were developed based on analysis of the following data sources: documents related to the programme, recollection of my experience, informal consultation with programme designers, and literature review.

The initial theoretical framework was based on the diffusion of innovations, social cognitive, and social influence theories. Diffusion of innovations was selected because it is one of the most used models in implementation studies (Estabrooks et al., 2008), and because of the central role of opinion leaders in the theory (Rogers, 2003). This theory was summarised in chapter 2. The social cognitive theory was chosen for its role in explaining potential mechanisms of opinion leadership, both within diffusion theory (Bandura, 2006) and in the operationalisation of the concept in trials (Flodgren et al., 2019). The social cognitive theory seeks to explain how people learn and deal with new situations by observing the behaviour of others in related positions. If the others are perceived as similar, their experience will affect the self-efficacy of the observer or their belief that they are able (or not) to perform the same behaviour (Bandura, 1977). Social influence theories have been used to explain the adoption of evidence-based practice in medical communities. The effects of opinion leaders are largely attributed to their roles in expressing and changing group norms. This ability, in turn, is based on their status, credibility and conformity to the group values. Innovations they endorse are seen as new standards of practice for

others in their social groups, what makes adoption a socially rewarding behaviour and non-adoption associated with potential sanctions (Mittman et al., 1992).

I tried to match previous theory about opinion leaders with the description of the programme based on stakeholders' knowledge. From the reconstruction of the programme, I identified the 'resource' components of mechanisms, e.g., presentation of innovation cases to colleagues; the intended outcomes, e.g., acceptability and adoption of innovations; and elements of the institutional context, e.g., organisational support, formalisation of the opinion leader role. From the literature, I identified candidate mechanisms, e.g. reduction of uncertainty (Greer, 1988), and context factors, e.g. similarity between opinion leaders and peers (Rogers, 2003). My previous experience with the programme filled interpretation gaps and made sense of the data into causal processes, a process that Pawson (2013) called informed guesswork.

The identification of themes for the initial theories was initially driven by the study's questions shown in table 3.1. Subsequently, I formulated theory-specific questions and provisional theories which guided the subsequent inquiry; these are shown in table 3.9 alongside tentative mechanisms. Theories 2 and 3 were identified first from the literature and documents, while theory 1 emerged later from the stakeholders' consultation. The three provisional theories fed into the initial programme theories that were tested and refined in this study.

Table 3.9 Theory-specific questions, provisional theories and tentative mechanisms

Research question	Provisional theory	Tentative mechanism
How did the recognition of opinion leaders as influencers affect their motivation and buy-in of innovations?	Institutional recognition motivates opinion leaders to buy-in to innovations and persuade their peers to change practice	Improved self-esteem and status
How did the contribution of opinion leaders to innovations affect the credibility and acceptability of these innovations?	Opinion leaders promote positive attitudes towards innovations by transferring their credibility among peers to innovations they support	Interpersonal trust
How did the experience of opinion leaders with innovations affect the behaviour of other practitioners?	The experiences of opinion leaders show the feasibility of adopting innovations, encouraging or constraining peers to adopt	Reduced uncertainty Peer pressure

To select the initial programme theories, I observed the following criteria:

- The relevance to explain the programme.

- The consistency with evidence from the literature.

- A balance between internal diversity and consistency of the resultant set, to allow the analysis of distinct interactions between mechanisms and contexts while avoiding recurrence across theories.

Above all, I observed the feasibility of collecting and analysing data to test and refine the theories (Mackenzie et al., 2009; Williams, 2018). As an example, early in theory development I identified a fourth potential theme about opinion leaders sustaining innovations through local adaptation and practical support to peers, a role highlighted by many authors (Greer, 1988; Dopson et al., 2001; Fitzgerald et al., 2002; David Johnson, 2012). The theme did not seem to match the experience of the consulted stakeholders, and I already had a lot to explore with the other three themes. So instead of developing it as a theory, I kept a personal record of being aware of the possible emergence of this topic during data collection and analysis.

3.6.1 Literature review

An exploratory literature review on opinion leaders´ studies was conducted to identify research streams, key themes, and potential mechanisms for the initial programme theories. I combined an electronic search and manual scanning of the reference lists of selected papers. Electronic strategies included: citation search of the first versions of a Cochrane review on opinion leaders (Thomson O'Brien et al., 1999; Flodgren et al., 2011); and a keyword search combining terms for opinion leaders, primary care and innovation, performed in health and social sciences databases (see in Appendices). After scanning titles and abstracts, papers were selected for full reading if they met the following criteria:

- Empirical studies: opinion leaders as component of interventions (e.g., trials) or observations (e.g., surveys); discussion about roles (activities, functions) or programme elements (mechanisms, context, outcomes); health settings.

- Theoretical studies and reviews: opinion leaders as the main topic or covered in related subjects (e.g., facilitation or implementation strategies); discussion about roles (activities, functions) or programme elements (mechanisms, context, outcomes); any settings.

Assessment of the papers was initially guided by the study's question and further by emerging themes. All papers containing relevant information on theory elements (context, mechanism, outcome), causal processes, or insights about opinion leaders' roles in innovation were summarised in a spreadsheet and linked to one or more of the themes shown in table 3.9. Primary, secondary and theoretical studies were included, and no exclusion was made based on quality or design; instead, the literature data were assessed for their potential to provide useful insights for the programme theories. Realist studies do not usually apply hierarchies of evidence when assessing the literature. Even 'bad research' can generate good evidence if we consider as the unit of analysis the 'evidential fragments' or pieces of information relevant for explaining the programme at issue instead of whole papers (Pawson, 2006a; Pawson, 2013).

Although an intuitive choice to a realist evaluation would be to start with a realist review (Pawson et al., 2005), I chose an exploratory and narrative approach for pragmatic and methodological reasons, set out next. First, the literature on opinion leaders is conceptually diverse (McCormack et al., 2013; Colquhoun et al., 2014), and the concepts related to opinion leaders' roles are used inconsistently in the literature (Thompson et al., 2006; Cranley et al., 2017). Other researchers have observed that confuse terminology and diversity of disciplines make it difficult to use systematic approaches and have instead used narrative

synthesis methods to summarise implementation literature (Contandriopoulos et al., 2010; Tabak et al., 2012; McKibbon et al., 2012).

Second, the expansive and exploratory nature of a realist review carried a risk of bringing 'scope creep' to this study (Saul et al., 2013) rather than clarification. Scope creep is a project management term meaning uncontrolled growth in a project's scope and requirements after the project begins. My primary goal in the first year of this project was to set boundaries and build initial theories to a loosely defined programme to allow the subsequent evaluation. Relatedly, realist reviews require the careful articulation of the review questions to prioritise which aspects of the programme will be examined (Pawson et al., 2005). I only developed a clear understanding of the programme and the scope of inquiry throughout the study.

Third, this study had time-sensitive planning, constrained by political changes that would take place at the end of the first year due to general elections in the study's country. Therefore, I wanted to develop theories in short time to start collecting participants' data while the programme designers were in strategic positions in the organisation to facilitate engagement with the research, recruitment of participants, and gathering of administrative data. A realist review, in contrast, would demand considerable time and resources, including familiarity with social sciences theories (Pawson et al., 2005; Rycroft-Malone et al., 2012).

The literature dataset resulting from this exploratory review was expanded and used with distinct purposes across the study. In theory development, I gleaned the papers to identify candidate theories. In theory refining, I zoomed into specific topics to support sensemaking of the data, align concepts with the existing literature, and unveil causal processes.

3.6.2 Using stakeholders' knowledge

Besides the literature review just explained, theory development was based on stakeholders' knowledge, drawn from the analysis of documents, informal consultation to programme designers, and my experience as a manager in the study setting. Next, I describe the use of documents and stakeholder consultation. I will return to the use of my experience in section 3.9.

Analysis of documents

The documents related to the programme were scarce, and the mentions of the programme were usually indirect or implicit. I thoroughly explored the webpage

of the Florianópolis Health Secretariat and external links; Google searched combinations of terms like advanced access, nursing protocols, primary care, and Florianópolis; and recovered notes from my previous work in the setting. The types of documents found were internal reports, regulations, plans, guidelines, protocols, monitoring tools, and conference abstracts. I also included as documents two papers about advanced access in Florianópolis. All documents were in Portuguese.

I was able to identify from documents: programme components, intended outcomes, relevant actors and events, and a few elements of the institutional context. For example, one report of the first two years of advanced access implementation (Zepeda et al., 2013b) provided the following pieces of information:

- The access workshops were an attempt to overcome a climate of low participation in change because of overwork, burnout, and chronic lack of resources

- The presentation of innovative experiences in the workshops had the purpose of valuing local experience and showing the feasibility of advanced access

- All clinics made some change in the access system after the workshops (local trials of advanced access)

- The utilisation of primary care by patients improved after the workshops compared to previous years

I identified the 'presentation of experiences' as a programme component, 'adoption trials' as intended outcome, the opinion leaders who presented in those workshops as potential participants, and the workshops as an initial milestone of the programme. There were also clues to mechanisms and context elements that I further developed with literature input, e.g., the suggestion that the opinion leaders were able to improve the confidence of colleagues to uptake advanced access based on the fact that they were 'local', therefore likely to work in similar conditions.

Stakeholders' consultation

An informal consultation to programme designers provided direct input from stakeholders to the theory development. Their contribution helped to circumvent the scarcity of information from documents and to shape the further investigation. The consultation included eight key stakeholders with diverse backgrounds and perspectives on the programme, which I identified from the programme

description and my experience. They all had a role in designing or implementing the programme at some level. Some were also opinion leaders, which broadened the range of experiences which I was covering. The decision on who is a key stakeholder is a matter of judgement and negotiation about who might have a stake or interest in the evaluation (Bryson, 2004; Bryson and Patton, 2010). The stakeholders that I selected were both privileged informants, i.e., with potential knowledge of various aspects of the programme, and intended evaluation users, i.e., in the position of disseminating or applying the study findings.

The participants of the informal consultation were contacted via an email in which I explained the study and asked for an informal meeting. All those contacted agreed to take part in the study. Before the meetings, I obtained verbal consent to take notes and use these notes in the research. In the meetings, I used the programme description and the provisional theories as conversation prompts. At the end of the meetings, I asked for suggestions of participants. After each meeting, I reviewed my notes to integrate emerging topics in the provisional theories and identify themes and prompts for further meetings.

Table 3.10 shows the profile of the key stakeholders. They were identified by capital letters rather than numbers to avoid confusion with the participants of the interviews (see table 3.14 in section 3.7.1). There were ten individual meetings, being one with each stakeholder plus two extra meetings with stakeholder B to discuss recruitment of participants and provision of administrative data. There was one collective meeting with stakeholders B, C, D, F, who were the core team of primary care management and shared an office. All the participants of the informal consultation were further invited to interviews in stage 2, and all but stakeholder A, who was on annual leave at the time, accepted and were interviewed.

Table 3.10 Profile of the key stakeholders

ID	Pseudonym, background	Position in the organisation*	Roles in the programme
A	Danilo, doctor	Senior manager/ political leader	Supported first pilots of the programme and implementation of the two innovations
B	Marcos, doctor	Senior manager	Implemented AA as practitioner; led regional/municipal implementation of AA
C	Estela, nurse	Senior manager	Led implementation of the NP; selected first NP opinion leaders
D	Roberto, doctor	Project manager	Implemented AA at clinic level; led production of AA guidelines
E	Ivan, doctor	Senior manager	Led regional implementation of AA; selected opinion leaders
F	Jean, doctor	Project manager	Implemented AA at clinic level; supported opinion leaders
G	Luiz, nurse	Project manager	Implemented AA at clinic level; led production of the NP
H	Vicente, nurse,	Middle manager	Led production of the NP; implemented NP at the regional level

AA = Advanced Access; NP = Nursing Protocols

* At the time of the stakeholder consultation

The stakeholders' consultation was an opportunity to pilot and develop the approach that I subsequently used for the realist interviews of stage 2. These conversations helped me to adapt: the language used (replacing jargon for recognisable terms e.g., collaborators for opinion leaders – see also section 3.3.5); the presentation of the theories (in small bits related to the participants´ stories rather than as statements in the beginning), and the questioning style (coming and going across the interview script rather than following a sequence).

3.6.3 Data analysis

To identify the elements and causal links of the initial theories, I coded the data units from all sources (literature, documents, notes from informal meetings) using an adapted thematic analysis approach (Boyatzis, 1998) in which the programme theories were the themes, and the elements of the CMO configuration were the

codes. The data were first coded under one of the provisional theories shown in table 3.9, and only then as a context, mechanism, or outcome. To identify the function of each data unit, I used questions instead of CMO labels: i) what the opinion leaders do; ii) what happens following their involvement in innovation; iii) how it happens and iv) why it happens, when, for whom. I avoided excessive fragmentation of the data by coding combinations of CMOC elements whenever they were apparent rather than sticking to the smaller data units as it is more usual in the thematic analysis (Boyatzis, 1998).

The analytical approach outlined was chosen to move the focus from variables to processes (Pawson and Tilley, 1997). Coding under theories first was a decision to prioritise the identification of patterns of generative causation instead of unconfigured CMO elements. It also helped to circumvent the classic realist problem of whether a given data unit is a context, mechanism or outcome, even more early in the course of the evaluation when the understanding of the programme is still immature (Pawson and Manzano, 2012).

From the coded data, I built tentative CMOCs. One example of data coding and tentative CMOC is shown in table 3.11. The distinction between the provisional theories shown in table 3.9, the tentative CMOCs like the example in table 3.11, and the initial programme theories that went to stage 2 is given by (i) the respective functions of each in the evaluation, and (ii) the degree of elaboration. The provisional theories are working hypotheses which drove the development work; the tentative CMOCs are attempts of linking theory elements into causal processes, and the initial theories are fully developed programme theories with testable elements.

Table 3.11 Sample of data analysis and tentative CMOC during theory development

Source	Data units	Coding
Document data	The presentation of experiences in the Access Workshops aimed to show the feasibility of advanced access in the local system, reducing restraints, raising interest, and encouraging others to new experiences. (Zepeda et al., 2013b)	Theme: 3 (opinion leaders promote adoption by showing the feasibility of innovations) CMO elements: mechanism (showing feasibility), context (examples from similar peers), outcome (adoption trials)
Literature data	The experiences of 'ordinary peers' with an innovation reduce the uncertainty about the feasibility of adopting that innovation – 'if they can do it, so can we'. (Locock et al., 2001) Seeing people similar to oneself succeed by sustained effort raises the observers' beliefs about their capabilities. (Bandura, 1988)	Theme: 3 (opinion leaders promote adoption by showing the feasibility of innovations) CMO elements: mechanism (reducing uncertainty, improving confidence), context (similarity between opinion leader and peers)

Tentative CMOC (under theory 3)

If practitioners are uncertain about the feasibility or advantages of innovation, and opinion leaders have managed to adopt it in similar or worse working conditions (context) the dissemination of those successful experiences will show the feasibility and advantages of the innovation, reducing uncertainty (mechanism) and encouraging adoption trials (outcome).

To refine the tentative CMOCs into testable theories, I checked them against implementation frameworks, social theories and empirical studies to fine-tune the concepts and fill some gaps. For example, drawing on a framework of implementation outcomes (Proctor et al., 2011), I defined acceptability as an outcome, an attitudinal change not necessarily accompanied by behaviour change; and expanded the adoption outcome to include the intention to adopt, trial adoption and integration to practice. Drawing on the Common Framework for Implementation Research (Damschroder et al., 2009) I checked if I was covering important context dimensions, and improved the definition of elements related to approach to implementation and climate for change. Drawing on concepts of the social cognitive theory (Bandura, 1977), I improved the causal assumptions of one of the initial theories, as follows. If observing the successes or failures of

similar others affects one's self-efficacy and propensity to behaviour change, then the observation of positive examples of innovation adoption from similar opinion leaders would reduce negative self-beliefs and enhance self-efficacy, improving the confidence of the observer to adopt the same innovations.

Theory development in this study was a long and meticulous process which mirrored the whole realist evaluation cycle. Theories were elicited from various sources; tested against empirical data; and refined upon previous research. The use of continuous cycles of developing, testing and refining theories both within the same and across distinct evaluations was defined by (Pawson, 2013) as the wheel of evaluation science, of which this is a small example.

The main outputs of stage 1 were the three initial programme theories with testable CMO elements which will be examined in chapter 4. In the next section, I describe how these initial theories were tested and refined in stage 2.

3.7 Stage 2: theory testing and refining

In this stage, I drew on interviews with programme designers, opinion leaders and a few target individuals, as well as a re-assessment of the literature to test and refine the initial theories.

The interviews followed a realist approach, which differs from other approaches used in qualitative research for its purpose. Realist interviews explore, test and fine-tune programme theories based on the participants' experiences (Manzano, 2016; The Rameses II Project, 2017c). Both the sampling of participants and the focus of the questioning were progressively purposeful, e.g., participants were suggested by the first interviewees, and emerging themes or new angles were integrated to the topic guides after each interview.

Literature initially reviewed for the theory development was examined again to answer specific queries. New sources were searched to deal with emergent findings, including other social theories besides those selected as an initial framework. For example, a theoretical framework for studying interpersonal trust in organisations (Mayer et al., 1995; Schoorman et al., 2007) was used to make sense of data on the mechanism of trust.

The data were thematically analysed with an approach based on the programme theories and the CMOC, similarly to what I made in stage 1 of this study. I compared the emerging CMOCs identified from the empirical data with the literature and the initial theories and modified the initial theories accordingly. Refined programme theories were produced, and a higher-level middle-range theory was abstracted from cross-analyses of these refined theories.

3.7.1 Sampling strategy

The sampling strategy was progressively purposeful and designed to identify information-rich participants (Patton, 2015). Two groups of participants were selected to two rounds of interviews, based on distinct rationales. To select the first-round participants, I developed a sampling framework (table 3.12) based on the participants' roles in the programme, as well as professional background, work position, and relation to specific innovations. I scanned a list of potential participants suggested by the key stakeholders by the occasion of the informal consultation; selected those with more potential to inform about the initial theories drawing on my knowledge of the setting.

The total number of participants in the study was 18, and the total number of interviews was the same – each participant was interviewed once. Twelve of these interviews were conducted in the first round and 5 of these, in the second round. All participants were tagged according to the four categories of the framework, which I used to balance the sample in terms of diversity of experiences and views on the programme. For example, a given participant could be an opinion leader, doctor, in a practitioner position and involved in advanced access rolling out, while another could be a programme designer, nurse, in a management position and more related to implementation of the nursing protocols. For this reason, the numbers in table 3.12 sum up to the total of 18 interviews for each component of the sampling framework but these figures overlap rather than summing up.

Table 3.12 Sampling framework and distribution of participants per category and interview round

Features	Rationale	Categories	Round 1	Round 2
Role in the programme	Distinct perspectives, potential to inform on different elements of the programme theories.	Programme designer	7	0
		Opinion leader	5	4
		Target individual	1	1
Sum of participants - all roles			13	5
Innovation related	Differences between the innovations' journeys provide opportunities for comparing aspects of the theories.	Advanced access	8	3
		Nursing protocols	4	2
		Both	1	0
Sum of participants - all innovations			13	5
Background	Differences in the dynamics of professional groups may be related to context differences.	Doctor	7	3
		Nurse	6	2
		Other		
Sum of participants - all backgrounds			13	5
Work position	Distinct perspectives, potential to inform on different elements of the programme theories.	Manager (senior-, middle-, project-)	9	0
		Practitioner (including practice managers)	4	5
Sum of participants - all positions			13	5
Total overall number of participants/interviews			13	5

The participants of the second-round interviews were selected based upon suggestions of the first interviewees. I identified incidents or events mentioned by the first-round participants that illustrated relevant aspects of the programme theories and selected potential informants on different angles of these events to challenge the initial theories and clarify emerging themes. This process corresponded to a preliminary analysis of the first-round interviews. Table 3.13 provides a sample of this analysis, in the form of a narrative built from interview data. The elements from the initial theories identified within this narrative are highlighted, and potential participants for further interviews are listed. Names and places are pseudonymised.

Table 3.13 Sample of the preliminary analysis of the first-round interviews

Story: Advanced access in the Bellevue clinic	The Bellevue clinic was resistant to implementing advanced access despite the stimulus of the Access Workshops, follow-up and support from middle-managers, and growing adoption in other clinics. The local team pleaded that their conditions were impeditive (overwhelming patient pressure and poor physical structure). Then local and middle managers agreed on inviting opinion leaders from clinics with similar problems who had implemented advanced access to meet the Bellevue team, share their experiences, and discuss adaptations of the innovation to the local conditions. At that time, the clinic was undergoing a major transformation, including structural reform, additional staff, and a new local manager supportive of advanced access. The visits of the opinion leaders and the momentum for change created by the structural changes helped to reduce restraints. The local team accepted a trial adoption, but after a few months retroceded to the previous access system. The resistant doctors were persuaded to try advanced access but did not change their opinions on that, and the structural barriers associated with overwork and burnout persisted even after the structural changes.
Informants	Dora and Janete, respectively middle-manager and practice manager in charge of the Bellevue clinic during the events described
Related theories	Initial theory 3; mechanisms: peer pressure, conformity; contexts: structural change, structural barriers; outcomes: compliance, resistance.
Potential participants	Murilo, opinion leader. Advanced access pioneer who was recruited to share his experience with the Bellevue colleagues; may compare his experience in the Tulip clinic, which also had structural problems and internal resistance but adopted advanced access, and what he observed in the Bellevue clinic. (Interviewed in the second round) Janete, opinion leader. The new practice manager who took charge of the clinic during the change process. In her previous position, she was an advanced access opinion leader in another clinic. (Interviewed in the second round) Gustavo, target individual. He was the main focus of resistance to advanced access in the Bellevue clinic. May inform about the mechanisms involved in resistance and compliance and context factors that undermine the influence of opinion leaders. (Did not answer the invitation.)

The stepped approach to sampling and data collection was adopted to maximise the investigation of emergent programme nuances (Palinkas et al., 2015). A flexible sampling strategy is important for realist evaluations because information-rich stories and programme nuances become more evident throughout the research (Manzano, 2016). Therefore, while the first sample included participants with a broad knowledge of the programme, the second sample included others with experience in particular aspects of the theories, or 'CMO investigation potential' (Pawson and Tilley, 1997). Consistently, the focus of the interviews was narrowed down from organisation-level events, which allowed a panoramic view of the programme, to clinic-level events, which were more suitable for the exploration of grained aspects of the theories.

I also expected that the participants would inform better about distinct aspects of the programme according to their role in the programme and position in the organisation (Manzano, 2016). Designers should know more about programme activities, expected outcomes, and macro context, e.g., political climate or approach to implementation. Opinion leaders and those individuals targeted by the programme should provide distinct perspectives on the micro context, e.g., personal relationships or group dynamics, as well as about unintended outcomes. Across the categories, those closer to the clinic level should have experience in specific instances of the programme and therefore, inform about the interplay between mechanisms and distinct contexts. Based on this rationale, I included more managers in the first round and more practitioners in the second round.

However, the roles in the programme were ideal types that frequently overlapped. Most participants occupied various job positions and therefore, played different roles over the years. I assigned them best-fit roles according to what I expected them to inform about, but some re-categorisation did happen after the interviews. For example, participant 4, Ivan, who was initially recruited as programme designer because s/he was in a management position with responsibilities over advanced access implementation was re-classified as opinion leader after the interview because we ultimately only talked about the past events in which s/he played this other role.

The identification of opinion leaders deserves a note. Several methods are available (Valente and Pumpuang, 2007; Kronberger and Bakken, 2011); a review in the topic was included in chapter 2. For this study, I adapted the informant method, in which a few individuals with good knowledge of the local system nominate the opinion leaders. The informants in this study were the participants of the stakeholder consultation and the first round of interviews. I asked each of them (i) who were the relevant actors that drove and influenced the change processes in which they were involved, and (ii) who else I should

interview to understand better the events we discussed, including institutional leaders, influential practitioners, and target individuals.

I chose this approach for simplicity and feasibility. Distinct methods are likely to identify distinct sets of opinion leaders (Grimshaw et al., 2006), but whether any method identifies individuals more effective as opinion leaders remain an open question; in a small system, a few well-informed people will probably identify opinion leaders as accurately as a sociometric method (Rogers, 2003). From my experience in the setting, I knew that the informants in this study, in particular, the key stakeholders that suggested the first sample, had a good knowledge of the actors and relationships in the local system. To enhance the rigour of the sample, I only included in the study opinion leaders mentioned by more than one participant, and which reportedly participated in objective change (e.g., discussion within a local team to adopt innovation, presentation of experience in a meeting).

The sample size was defined to balance between the power to identify variations in context, and my capacity to conduct interviews within the timeframe and resources of the project. I aimed for around 40 participants, but a delay of more than a year in obtaining in-country ethics approval constrained the study timeline and the final number was 18 participants. One round of interviews planned as part of stage 1 was replaced by the informal stakeholder consultation. Follow-up interviews with same participants which were planned to further explore selected topics were not conducted. Seven out of eight participants of the stakeholders' consultation were also individually interviewed in stage 2 (see table 3.10 in section 3.6.2).

All participants were recruited through a standard email invitation with an attached information sheet. Those who accepted had an internet interview scheduled at their best convenience. The consent forms were signed electronically. The first round of interviews took place between November 2017 and January 2018 and the second round was completed across May 2018. Interviews were conducted using internet videocall free services (e.g., Skype) and recorded with an external digital audio recorder. Logistic challenges included finding suitable times and interview rooms at the University of Leeds considering the difference in time zones between the participants and me. I used video calls to circumvent a common limitation of phone interviews which is the lack of access to non-verbal language and informal communication. Table 3.14 shows a profile of the participants, identified by pseudonyms.

Table 3.14 Profile of the participants of individual interviews

ID	Pseudonym, background	Position**	Roles in the programme
ROUND 1			
1*	Marcos, doctor	Senior manager	Implemented AA as practitioner; led regional/municipal implementation of AA
2*	Estela, nurse	Senior manager	Led implementation of the NP; selected first NP opinion leaders
3*	Roberto, doctor	Project manager	Implemented AA at clinic level; led production of AA guidelines
4*	Ivan, doctor	Senior manager	Led regional implementation of AA; selected opinion leaders
5*	Jean, doctor	Project manager	Implemented AA at clinic level; supported opinion leaders
6*	Luiz, nurse	Project manager	Implemented AA at clinic level; led production of the NP
7*	Vicente, nurse,	Middle manager	Led production of the NP; implemented NP at the regional level
8	Dora, doctor	Middle manager	Led regional/municipal implementation of AA; selected opinion leaders
9	Douglas, doctor	Practitioner	Opinion leader of AA at clinic/regional level
10	Ricardo, doctor	Practitioner	Opinion leader of AA at clinic/regional level
11	Karen, nurse,	Practice manager	Target individual for AA, supported production /implementation of the NP
12	Aline, nurse	Middle manager	Regional opinion leader of the NP
13	Janete, nurse	Senior manager	Opinion leader of AA at clinic level; contributed to the NP implementation
ROUND 2			
14	Diana, doctor	Practice manager	Supported implementation of AA/NP at clinic level
15	Murilo, doctor	Practitioner	Opinion leader of AA at clinic/regional level
16	Clara, nurse	Practitioner	Opinion leader of the NP
17	Bento, doctor	Practitioner	Target individual then AA opinion leader
18	Luana, nurse	Practice manager	Supported implementation of AA and NP at clinic level

*1-7 also participated in the stakeholders' consultation

**Position in the organisation at the time of the interview

The final sample was sufficient to explore the main aspects of the theories, despite the low participation of target individuals, a limitation that I will discuss in chapter 8. There is no ideal number of participants in qualitative research, and sample sizes in realist studies are usually defined based in usual criteria like completeness and saturation, but also on relevance and rigour built upon a combination of methods (Emmel, 2013).

3.7.2 Realist interviews

Qualitative research interviews - those conducted through a conversation - are used to explore the experiences of the interviewees and the ways in which they perceive the world. Qualitative interviews are particularly useful to understand the relations between social actors and their situation, and they may provide empirical data to test concepts and hypotheses developed out of a theoretical perspective (Gaskell, 2000). Therefore, they are a good fit for realist research, and indeed qualitative interviews are the most frequent data collection method in realist evaluations in healthcare settings (Marchal et al., 2012).

Interviews can be useful across the whole cycle of the realist evaluation to 'inspire/validate/falsify/modify' (Pawson, 1996, p.295) hypotheses about a programme. Realist interviews are distinct from other qualitative interviews in terms of i) the subject matter of the interview which is the researcher´s theory rather than the participant´s experience; ii) the purpose of the interview which is to refine the researcher´s theory rather than explore the participant´s experiences, and iii) the conduction of the interview which adopts a 'teacher-learner' approach in which researcher and participant exchange roles during the conversation (Manzano, 2016). In realist interviewing differently from data collection in constructionist studies for example the evaluator will take control of the interview and purposefully guide the conversation as a process of 'assisted sensemaking' (Mark et al, 1999, p. 179).

I chose this method to articulate participants' reasoning and context, to compare different views about a same aspect of the theories and to confront my views on the programme – as a researcher but also former stakeholder - with the perspective of others who were in different positions in relation to the programme at the time of the recovered events. See section 3.9.2 for more on how my views on the programme were affected throughout the study.

Conducting an interview can be surprisingly challenging for non-experienced researchers. Some common problems include insufficient probing or follow-up questions, failure to actively listen, and asking questions in an insensitive way

(DeJonckheere and Vaughn, 2019). Some individuals may be reluctant to speak and share ideas and therefore hard to engage in conversation, therefore providing incomplete or superficial data (Creswell, 2013, p.164). Some of the issues outlined can be prevented by having a well-developed interview guide with open-ended questions and piloting the guide before data collection (Creswell, 2013; DeJonckheere and Vaughn, 2019).

I developed an interview guide adaptable to the experiences of distinct participants with specific aspects of the programme theories. Open questions were combined with questions to test specific aspects of the initial theories. A table with the theory elements, similar to the CMO tables proposed by Pawson (2013), was used alongside the interview guide as a quick reference to the theories.

The guide received a significant contribution from participants of the RAMESES community (The RAMESES Projects, 2020) which is a diverse group of novice and senior realist researchers who meet virtually through emails and webinars to share resources and advice. I reached out for support of this community on how to translate programme theories into interview questions that allowed testing and refining the theories. The guide was piloted with two programme designers to improve flow and wording before the first round and was reviewed between the first and second rounds to account for emergent theory elements and new prompts for future interviews.

Although the primary purpose of the interviews was to test the theories, I also identified new themes and causal assumptions which led to refining the initial programme theories. Therefore, I made judicious use of the theory gleaning, refining and consolidation functions of the realist interviews through progressively purposeful questioning within and across interviews (Manzano, 2016). The combination of these functions across the interviews in part compensated for the reduction in the number of participants and rounds caused by the prolonged ethics approval process. An example of such progressive questioning within the same interview is in table 3.15.

Table 3.15 Example of progressively purposeful questioning

Question	Purpose
I want to understand how this strategy works. In your experience, how the experiences showed in the access workshops changed the way that other practitioners felt of behaved about advanced access?	Explore mechanisms
Some participants suggested that the examples of the workshops helped others to feel more confident to adopt advanced access. Is that something you observed? Could you give an example?	Test mechanisms
It seems that the examples of the workshops were not convincing to all practitioners. Why do you think this strategy worked better for some professionals or teams than others? Some participants have suggested that these different reactions can be explained by different perceptions of the advantages of the innovations, or yet by distinct relationships with those promoting the innovations. Is that something you observed? Can you give me an example?	Explore/test contexts
The experiences of opinion leaders seem to show to some colleagues that the innovations are viable, reducing restraints and promoting more intention to adopt. Such 'demonstrative' function might explain what happened in the clinic X, but not in the clinic Y. Why did the same strategy not work there? I was thinking of what one participant mentioned about senior workers in that clinic working as opponent leaders, because of negative experiences with innovations or resentment for not being recognised. Is that something that you have observed?	Test/refine emerging contexts, using specific events as prompts

3.7.3 Data analysis

All interviews were transcribed verbatim by a contractor in the original language of the participants, which is also my mother language (Portuguese). I verified the fidelity of the transcripts against samples of the original audio files. The initial coding was made over the Portuguese transcripts to capture more nuances of the language; when I had a good idea of which fragments would be included in the analysis, I translated them and the coding system to English. All quotes included in the thesis were translated and reverse translated to check for consistency with the original, with support of Google translator. Coding was manual, over MS Word files, using the comments function. I mostly worked over reduced data files, consisting of selected, translated, and coded fragments of the transcripts summarised by participant, theme, and code.

The interviews were analysed with a theory-driven thematic approach (Boyatzis, 1998; Dixon-Woods et al., 2005), with an evolving coding system based on the initial programme theories and emerging themes. In terms of thematic analysis, the programme theories were themes, the theory elements (contexts, mechanisms, outcomes) were codes, and selected events or incidents which illustrated aspects of the theories, like those identified in preliminary analysis of the first round of interviews, were cases.

In data extraction, I tried to preserve the whole meaning of each data unit and to capture 'naturally occurring' generative causal processes instead of breaking the data into its smaller units. Like in theory development, I coded the data first to theories (themes), then to events (cases) if applicable, and only them to CMO elements (codes). The coding tree was extrapolated from the CMO tables used in the interviews. I coded for the same CMO elements across theories to identify connections. Some emergent topics were added to the coding system between the first and second rounds of interviews, e.g., inertia and low receptivity to change, or groups and spaces of influence. The list of themes, cases and codes is shown in the Appendices.

The data analysis findings were organised in CMOCs backed by the data. To identify CMOCs, I first identified reported outcomes, then associated mechanisms, generating 'MO' dyads, then gradually added context elements or additional mechanisms. A similar approach was used by Byng, Norman and Redfern (2005) to evaluate a primary care intervention. I actively looked for recurrence of CMOCs across the data and negative examples to reinforce my interpretations. To explain divergent but related CMOCs, I looked for context factors which variation led to distinct MO dyads, what is best represented by the two distinct mechanism-outcome pathways triggered by the same programme component in programme theory 3. Throughout the reworking, reformulating and extending of the programme theories, which also involved some creative process (Dixon-Woods et al., 2005), I went back and forth between the higher-level interpretations and the specification of CMO elements.

I based the approach to data analysis above outlined on the following rationale:

- It allowed me to analyse the theory elements across theories, building up a higher-level explanation towards the middle-range theory.

- The theory elements are not intrinsically mechanisms, contexts or outcomes, but only assume these functions at specific moments in the analysis (Westhorp, 2018, p.55).

- The data units usually contained combinations of context, mechanism and outcomes, as well as nested causal processes, e.g. mechanisms within contexts (Westhorp, 2018, p.56).

As an example of the last topic, the refined theories contain nested CMO configurations with their generative causal logic. These nested CMOC are mostly mechanisms operating within the context of causal processes within causal processes.

A sample of data analysis is shown in table 3.16.

Table 3.16 Sample of the thematic analysis of interviews

Example 1: Data unit confirming initial theory 3	
Quote	*From the moment you see that it is possible by the experience of your colleague who has the same position in the institution as you, you say "we have that power", is an empowerment that comes from the collective. (Aline, nurse, opinion leader)*
Theme	Programme theory 3 - The experience of opinion leaders shows the feasibility of adopting innovations, encouraging predisposed practitioners to adopt.
Code	The similarity between opinion leaders and peers; uncertainty related to innovations.
Case	Implementation of the nursing protocols.
Summary	The practical example of colleagues in the same position, practitioners facing the same problems, reduced fear of the innovation, showed it was possible, and prompted adoption. A growing number of adopters and self-comparisons over time provide more evidence of the feasibility of change, reinforcing the initial confidence and sustaining adoption.
Example 2: Data unit changing initial theory 2	
Quote	*I realise that nowadays I am a person very associated, here in the district, with the management, I do not know if for being involved with the residency, with a lot of things, but there is this more suspicious look, "this one belongs to their team". … I can feel it, the credibility ... is not that of a peer as it seems to be, it is maybe a half-peer. (Bento, doctor, target individual/opinion leader)*
Theme	Programme theory 2 - Opinion leaders promote positive attitudes towards innovations based on their credibility within peers.
Code	Formal roles and positions; group membership and identification.
Case	Bento's trajectory from target individual to opinion leader.
Summary	It is not the formal role or position that damages the credibility of the opinion leader, but the association of their image with management. Such association makes others perceive them as outsiders ('half-peers') thus reducing identification and trust.

The predominant reasoning throughout data analysis was 'retroduction', which consists of a combination of inductive and deductive logic with insights and logic of the researcher (The Rameses II Project, 2017b). Consistently, I used data-driven and theory-driven codes (Fereday and Muir-Cochrane, 2006). The CMOCs emerging from the data were compared to the initial theories, modifying them accordingly: changing or detailing initial assumptions, offering rival explanations, or providing negative confirmation.

I prioritised to include in the analysis data units with recurrent topics across theories or reports of observed outcomes. Topics recurrent across theories were seen as potential elements of middle-range theory. Outcomes were 'observed' when participants said that something happened, 'anticipated' when the participants expected it to happen, and 'implied' when not explicitly mentioned but suggested by the interview data (Punton et al., 2016). Given the nature of the expected primary effects of opinion leaders (opinion change), and the fact that behaviour change usually depends on other contextual factors, I frequently relied on anticipated or implied outcomes to build CMOCs, but I avoided the use of generic statements as evidence. Emergent topics with few supportive data but high explanatory power were included in the analysis if they illuminated unique causal pathways, e.g. the idea that opinion leaders could be 'wasted' by repeated use over time (chapter 7). This decision followed the generative causation principle that 'what causes something to happen has nothing to do with the number of times we observe it happening' (Sayer, 2000, p.14).

I also referred to the literature to support interpretations and draw causal inferences (see section 3.6.1). For example, to analyse the finding that some opinion leaders who were too close to the managers lost influence even without moving out of the group of practitioners, I explored literature on group processes and social identity (Brown, 2000a; 2000b; Hogg et al., 2012) to understand how opinion leaders seen as 'outgroups' could lose their ability to reinforce the sense of belongingness among colleagues.

The refined programme theories will be presented in chapters 5-7, and the middle-range theory and implications for practice and research in chapter 8.

3.8 Ethics

This study was approved by the School of Medicine Research Ethics Committee at the University of Leeds (17th Oct 2017, reference MREC16-006 – Amendment 1), by the Brazilian National Research Ethics Committee (16th Nov 2017,

reference 67134017.0.0000.0121), and by the Research Board of the Florianópolis Health Secretary (24th Nov 2017).

The key ethical issues identified by the reviewers and I were related to:

- Anonymity. In a small organisation, in which people have singular trajectories, there was a risk that participants were identifiable from the findings. Additionally, the disclosure could lead to sanctions of the management for unfavourable opinions.

- Exemption. Because of my previous work in the study setting, there was a risk that the participants perceived coercion in the recruitment, or that they answered the interviews with courtesy and confirmation biases. Additionally, given my knowledge of and interest in the programme, I could impose my interpretation on the data.

To minimise these risks, I adopted the following measures:

- The risks and safeguard measures were stated in the information sheet, discussed before the interviews, and reinforced whenever sensible topics emerged.

- The recruitment was made via standard emails, and I avoided personal contacts which could be perceived as a push for participation.

- Key local stakeholders were involved in the study from the onset to create interest and buy-in and reduce the chances of misuse of the research findings.

- All the personal data and other identifiers, e.g., names of clinics, were anonymised.

- All participants were offered to approve their interview transcripts and the outputs in which their quotes were used before its inclusion in publications.

The in-country approval of the study took 15 months and two applications. In the first assessment, the ethics committee requested changes to the nature of the study, e.g., random recruitment and anonymous questionnaires. They wanted more safeguards against the risks of disclosure and sanctions to participants for their opinions. I replaced exploratory interviews with the informal stakeholders' consultation and excluded focus groups and follow-up interviews. Data collection was delayed and constrained, which limited the analysis of some perspectives of the programme.

This episode is reported here as justification for some methods choices and also as a reflexive note. The evaluation takes place within a political, organisational and financial context which affects the results of the studied interventions, but

also the relationships between stakeholders and, potentially, design and data collection choices (Manzano, 2016).

3.9 Selected methodological issues

Throughout the development of this study, I faced many methodological challenges. I selected to develop in detail two topics that were relevant for the choices of this study in terms of design, data collection and analysis.

3.9.1 Attributing outcomes to opinion leaders' interventions

Explaining distinct outcome patterns is the goal of realist research (Pawson and Tilley, 1997, p.74), and the rationale for choosing this approach was to understand why the outcomes of opinion leaders' interventions are so hard to predict. However, defining which outcomes to analyse in this study was challenging for some reasons outlined next.

First, the proximal effects of opinion leaders are intangible; they primarily influence the beliefs, attitudes and opinions of others. These effects may lead to observable behaviour change, provided that other enabling conditions are present, e.g., sufficient resources for acting out the target behaviour. Second, change is just one possible effect of their influence, alongside reinforcement of previous behaviours, no effects, prevention of change (Weimann, 1994). Without objective assessment and fair comparison is difficult to say whether the opinion leaders made a difference, or if any change (or no-change) was better attributed to something else. As I could not obtain administrative data at the clinic or individual levels to cross-reference with the assumptions and observations of the participants, I relied on the participants' reports and my own observations from the time I worked in the study setting.

I addressed the problem of defining outcomes in two ways. First, I analysed implementation outcomes (Proctor et al., 2011), e.g. acceptability and adoption of innovations rather than clinical- or system-level outcomes. I also developed one initial theory with an upstream outcome, the opinion leaders' buy-in of innovations, which works as a context to the other programme theories. In this way, I was able to capture proximal outcomes which are expected to work as antecedents of behaviour change. Other authors also defined proximal outcomes for change agency strategies in healthcare, e.g. 'critical mass of leadership influence' or 'supportive environment for change' (McCormack et al., 2013).

Second, I considered as stronger evidence of opinion leaders' influence: i) first-person accounts of behaviour change as a consequence of interacting with opinion leaders, and ii) examples of an observed change in opinion or behaviour of colleagues following interaction with opinion leaders. This choice was similar to the differentiation between observed, assumed and implied outcomes in Punton et al. (2016).

The attribution problem relates to the nature of the programme. Opinion leaders primarily affect the opinions and attitudes of others, which are only expressed as behaviour in the presence of contextual conditionings (Stehr et al., 2015). Opinion change is quite proximal in the implementation chain, and several factors will intervene in its conversion into sustainable changes in professional practices. In realist studies, any observed outcomes are always a result of interactions within and across systems, not simply attributed to the programme (Westhorp, 2014). In opinion leaders studies, this reflects on the trouble to disentangle their effects from other components of the interventions within which the opinion leaders are used, or from the context (Soumerai et al., 1998; Bloomfield et al., 2005; Althabe et al., 2008). For example, the pioneer study of Coleman et al. (1957) which first demonstrated the influence of opinion leaders in the prescribing behaviour of colleagues in a medical community had its data reanalysed by other authors that attributed the changes in prescribing to marketing strategies rather than social influence (Van den Bulte and Lilien, 2001).

3.9.2 Ensuring rigour as an ex-insider

Changing from a practitioner and manager position into a research mindset was a convoluted process which took place alongside the research. As said in chapter 1, this study originated from my practice with the programme. After leading implementation of advanced access and nursing protocols from a senior leadership position, I left my job in Florianópolis and moved to the UK to pursuit this PhD. Therefore, I was not an internal evaluator, but I still knew more about the setting, programme and participants than could be expected from an external evaluator. By the time of data collection, I was an ex-insider (Manzano, 2008), someone still considered by the participants as one of them despite not being an organisation member anymore. My proximity to the story and the epistemological position chosen for this study made my voice constantly present during data collection and analysis.

This position of ex-insider brought advantages in terms of knowledge of the programme and insights but also some risks. From the participants' side, there was some courtesy or social desirability bias in the interviews. If I could not

completely avoid this bias - I had been the line manager of many participants -, I tried to mitigate it by asking the same questions in different ways and returning to answers that seemed superficial or 'too easy'. From my side, there was a trend to directing too much the interviews or 'cherry-picking' findings to confirm my views. I used triangulation of data sources to improve the credibility of my conclusions, and prioritised analysis of contradictions or gaps in the theories. I followed the advice of considering distinct explanations as equally valid alternatives coming from different data sources (Patton, 1999). One example of alternative and concurrent explanations was the multiple mechanisms that linked the examples of opinion leaders to patterns of adoption in programme theory 3 (chapter 7).

The risk of imposing my interpretation during data collection and analysis was increased by the nature of the realist interview which requires to some extent that my ideas are made explicit to the participant's appraisal (Pawson and Manzano, 2012). One methodological implication of my ex-insider position for the interview method was that the division of expertise, or knowledge about the programme between participants and evaluator (Pawson and Tilley, 1997, p. 160-161) was blurred. Participants usually contribute non-systematic ideas and experiences to theory development, with distinct participants informing better about distinct aspects of the theories (section 3.7.1), while evaluators bring systematic hypotheses with some degree of CMO architecture. As a former programme designer and novice researcher, I had more familiarity with details of the programme operation than with the more abstract social science theories. A position so similar to the participants may reduce the difference between our pools of knowledge and narrow the range of distinct aspects of the programme that I was able to explore.

In summary, the following safeguards were adopted to reinforce exemption (as appropriate for a realist study) and rigour in data collection and analysis:

- Programme description: to avoid relying too much on my version of the facts, I tried to back any assumptions about the programme with evidence from documents, the informal consultation, or the literature.

- Recruitment: to minimise the chance that participants felt coerced to participate because of our previous work relationship, I sent invitations as a standard email, highlighted the fact that I was not in the organisation anymore, and did not engage in informal communication until after they have accepted to participate.

- Interviews: I used open questions, explained the theories briefly avoiding jargon, asked for examples to confirm statements, avoided engaging in

'small talk' about familiar topics, and actively explored emerging themes. I tried to balance the relational aspect of interviewing and the necessary rigour of research (DeJonckheere and Vaughn, 2019).

- Data analysis: I looked for negative or alternative explanations which contradicted my assumptions, backed all statements with quotes, and discussed my interpretations with the supervision team.

- Throughout the study: I documented insights, reflections and decisions in a diary, to allow backtracking the rationale for methodological choices or interpretations; and acknowledged my experience as data source in thesis writing.

The findings of the study also challenged my initial assumptions including deep-seated hypotheses about the programme, leading to exclusion of a whole programme theory from the evaluation after the stakeholders' consultation. Early in theory development, I hypothesised that opinion leaders would improve adoption of innovations by supporting their peers to understand and use innovations in daily practice. From my experience as a practitioner, I noticed that some doctors were particularly respected by both their teammates and doctors from other teams because they provided hands-on support and practical advice. From the literature, I identified that opinion leaders are able to translate tacit knowledge into explicit procedural knowledge (David Johnson et al., 2012) and to modify and translate innovations to suit local needs (Fitzgerald et al., 2002).

For all the sense that I could find in the idea of opinion leaders providing local support to use of innovations, I could not raise the interest of the programme designers on the topic. Therefore, I excluded that initial theory of subsequent testing only to see a related idea emerge from data analysis as context for theory 2. Proximity between opinion leaders and peers seemed to facilitate adoption but through other causal processes like comparison and highlight of practice gaps, or trust based on informal relationships (see chapter 6).

In the end, I would argue that my interested stance and knowledge of the programme brought advantages to this study, possibly contributing to: i) engagement of the programme designers (my former colleagues) in the stakeholder consultation; ii) good return of the invitations to interviews (over 60% of acceptance); iii) selection of good informants based on my knowledge of their trajectory and profile; iv) development of programme theories with a good fit to the events; v) use of my knowledge and insights to explore emerging themes and fill data analysis gaps. Last, my knowledge of the setting and relationship with local stakeholders might be useful to adapt the findings to local needs, capture

attention and spark interest of local actors, thus maximising the use of research findings.

Chapter 4 Initial programme theories

4.1 Introduction

This chapter presents the initial theories developed in the first stage of the study. Each theory is explored in one section. The first theory is about how institutional recognition facilitates buy-in of opinion leaders to innovations. The second focus on how the opinion leaders transfer their credibility to innovations they support. The third theory examines distinct ways by which the experience of opinion leaders with innovations influences the behaviour of their peers.

Each section describes elements and tentative causal processes of one programme theory. Within each section, subsections correspond to outcomes, mechanisms and context elements. The outcomes, which are presented first, are based on the intended outcomes from the perspective of the programme designers. The mechanisms and context elements of each theory come next. At the end of each section, I present the corresponding initial programme theory. Last, the chapter ends with a synthesis of the three initial theories in a diagram, and a tentative statement of initial middle-range theory.

4.2 Initial theory 1: engaging opinion leaders in innovation

The initial theory 1 seeks to explain how institutional recognition and involvement in implementation could motivate opinion leaders to support and promote innovations. The buy-in of opinion leaders, in turn, is expected to facilitate acceptability and adoption of innovations by their peers. Therefore, the outcome in this theory is part of the context for the subsequent theories.

The broad assumption of the programme designers about the involvement of opinion leaders in change was that such involvement would made them feel more motivated to innovate, collaborate with peers and managers, and persuade colleagues to change. This was the rationale behind, for example, the recruitment of opinion leaders to coordinate workgroups or present experiences related to advanced access (Zepeda et al., 2013b).

I identified potential explanations for their motivation and buy-in to innovations from the stakeholders' consultation, and literature on self-efficacy (Bandura, 1977), ownership (Pierce et al., 2011), and collaborative behaviour in organisations (Van Dick et al., 2006; Organ, 2018). The main hypotheses elicited were that: i) institutional recognition would improve self-esteem and confidence in their ability to perform better in work and innovate, and ii) participating in production and adaptation of innovations would promote ownership of the

innovations (mechanisms). Improved self-esteem would encourage innovative behaviour, and ownership would motivate active promotion of the innovations (outcomes). These processes would be enabled in the presence of i) perceived advantages in adopting innovations and/or assuming the influential role; ii) organisational support, and iii) personal interest in the innovation topic.

4.2.1 Collaborative behaviour, improved management capacity and buy-in to innovations

As reported by key stakeholders, institutional recognition seemed to motivate opinion leaders to improve practice, innovate, collaborate with colleagues and managers, and discuss innovations with colleagues. The programme designers saw the opinion leaders as a resource to facilitate innovation adoption, and expected that their involvement could motivate other practitioners to engage more with their work and collaborate with local improvement (Zepeda et al., 2013a; Zepeda et al., 2013b). The first to be affected by this climate of collaboration and work commitment would be the opinion leaders, and their motivation would then influence the broader staff.

These assumptions found resonance in the literature. Recognition as influential seems to improve the work commitment of opinion leaders, contributing to successful implementation. Valente and Davis (1999) suggested that buy-in of innovations is an antecedent of the opinion leaders' active engagement in diffusion. The commitment of opinion leaders seems to be a key factor in the successful implementation of evidence-based practice (Dopson et al., 2001; Locock et al., 2001).

The programme designers also expected that recruiting opinion leaders to innovation project would facilitate collaboration between practitioners and managers. During my work in the study setting, there were many collaborative workgroups involving managers and practitioners, e.g., to build advanced access guidelines and indicators. Many opinion leaders involved in these workgroups were invited to management positions as a form of recognition. Those who accepted joined an emergent group of technical managers with clinical background and experience in the setting. The programme designers emerged from this group. Most opinion leaders who moved to management were still there at the time of this writing, despite successive political changes. It seems that the institutional recognition of opinion leaders contributed to enhancing the technical capacity of management, reinforcing the initial conditions in which the programme emerged. One of the programme designers highlighted the strengthening of

management capacity as the key strategic effect of the programme, creating conditions to continuous innovation.

Practitioners who become managers usually base their new roles on a dual clinical and managerial perspective. The metaphor of a 'two-way window' has been used to describe the dual roles of doctors who become managers (Llewellyn, 2001). Clinical directors in a study in UK hospitals privileged professional training and knowledge over administrative expertise, which contributed to a unique professional and managerial discourse that disputed with the old management structure of the hospitals. That is similar to the gradual control of the organisation by 'technical managers' in my study setting, a process that I followed first as a doctor and then as one of those 'new managers'.

Opinion leaders recruited as project managers in an evidence-based project in the NHS (McLaren et al., 2002) were found to demand support from peers and managers to deal with the tension, pressure and isolation of their role. Similar challenges were felt by opinion leaders in management in my setting (Loch, 2009). Other authors have highlighted the tension between informal leadership and formal roles as a potential risk to the motivation and credibility of opinion leaders (Ryan et al., 2002; David Johnson, 2012). The overlap between opinion leadership and administrative leadership and the tension between informal leadership and formal roles were recurrent themes in the theory development.

4.2.2 Pride, improved self-esteem, social status and ownership of innovations

The programme designers suggested that the recognition of opinion leaders would motivate them to engage in implementation through feelings of pride and self-esteem, and improved social status. They would feel appreciated, be sought for advice by practitioners and managers, and see themselves as experts. These psychological and social rewards would lead them to support and promote the innovations associated with the initial recognition. Additionally, innovations to which they contributed would be seen as products of their work, promoting a sense of authorship and responsibility, and a wish to see their work spread.

Just as assumed by the programme designers, the association between recognition and buy-in of innovations was shown to be mediated by pride in previous research. In a study of guideline adoption in US healthcare organisations, (Collins et al., 2000) suggested that the commitment of opinion leaders to the projects was motivated by a sense of pride and appreciation for being recognised as influential. The idea that pride and self-perception as

capable facilitate engagement in persuasion find theoretical support in the construct of self-efficacy from social cognitive theory, which is the perception that one can perform a behaviour or influence others behaviours (Bandura, 1977). In one study about environmental change (Dalrymple et al., 2013), opinion leaders with high levels of self-efficacy (measured by self-reported agreement with efficacy-related statements, e.g. their understanding of the topic and role in helping others' understanding) were observed to participate more in influential behaviours.

Consistently with the hypothesis of awareness of the influential role and pride as motivators of pro-innovation behaviour, Rosen et al. (2015) showed that US school nurses who were aware of their role as opinion leaders engaged more in the persuasion of peers regarding HPV vaccines. A lack of awareness of the influential role was related to less engagement in promoting the vaccine even when the opinion leader had positive attitudes about it. Other authors have observed mixed reactions, e.g. in a study with community physicians and opinion leaders in paediatrics, some opinion leaders embraced their roles as an honour, while others expressed discomfort and saw the role as challenging (Wadhwa et al., 2005). Valente and Davis (1999) also suggested that not all opinion leaders would enjoy the role; some could feel the acknowledgement that comes from recognition as an intrusion.

The relation between social status and buy-in to innovations finds support in the notion of opinion leaders as pursuers of social advantages in networks. Burt (1999) drew on social capital theory to analyse the motivation of opinion leaders to play influential roles and proposed that they are driven by an interest in pursuing opportunities resulting from gaps in social structures. They engage in persuading behaviours motivated by competitive advantages in terms of information and control benefits, which in turn come from their recognition both within their groups and across groups. Drawing upon Burt's ideas, David Johnson (2012) suggested that opinion leaders are motivated by recognition coming from their potent social roles in translating external knowledge for their groups. The role of opinion leaders in translating external knowledge for their groups was also mentioned in other studies (Locock et al., 2001; Fitzgerald et al., 2002; Fitzgerald et al., 2003).

Programme designers suggested that the involvement of opinion leaders in innovation was expected to bring them a sense of responsibility and ownership for the innovations. Direct contribution to the innovations, e.g., participation in writing guidelines, seemed to reinforce the perception of the innovations as products of the opinion leaders' work. The participation of opinion leaders was also expected to bring an indirect sense of participation and ownership to the

opinion leaders' colleagues, who would feel represented by the involvement of 'one of them' in change. Examples of ownership and participation in this study's setting include, respectively: the advocacy role assumed by opinion leaders who participated in workgroups to produce advanced access guidelines (Zepeda et al., 2013a); and the sense of collective achievement in the professional group of nurses after publication of the first nursing protocols.

In a study about the reasons why GPs engaged in a successful quality improvement scheme in the NHS (Spooner et al., 2001), the participants reported that a sense of involvement and participation in the project encouraged local change, improved practice morale, and gave them pride in their work despite the extra energy involved in change. The outcomes and associated mechanisms observed in that study were quite similar to the assumptions of the programme designers of my study about collaboration, participation and motivation to engage in change.

Last, programme designers explained the engagement of some opinion leaders in change as a matter of intrinsic motivation for the innovations. From my experience, some opinion leaders, in particular the first to adopt advanced access, were indeed particularly interested in the innovation topics. This assumption resonates with literature that defines opinion leaders as 'legitimately interested' in the topics they are influential (Kronberger and Bakken, 2011; David Johnson, 2012). The involvement with innovations would, therefore, be per se a source of motivation and satisfaction. According to the same programme designers, these intrinsically interested opinion leaders were also those who showed more involvement in wider change initiatives, expressing a willingness to be at the centre of change processes or see themselves as the agents of change. The topic of intrinsic motivation and wish of differentiation emerged again from the interviews and was included in the refined theory (chapter 5).

4.2.3 Organisational support, self-directed influence, perceived advantages, and innovation fit to the local system

The first relevant context factor I identified was the support of the programme designers to the innovations, e.g., through policy declarations and implementation events; and to the opinion leaders' role, e.g., through role clarification and protected time to execute the activities related to the new role. The programme designers were all local professionals who, from my perception, were highly committed to motivating the staff and improving the services in a context of restrained resources and overwork. Previous research has highlighted

the importance of organisational support both to the success of innovation projects and to the motivation of opinion leaders to persuade others, as exemplified next.

Integration of the influential role in the organisation is a key contextual element of change agency strategies and is related to the successful engagement of opinion leaders. They need to feel that adequate resources and support will be available and that their role will be seen as legitimate by their peers (McCormack et al., 2013). The engagement of opinion leaders is also motivated by perception of adequate project management; projects with serious administrative issues have shown trouble to engage opinion leaders. They may disagree with the project foundations or conduction or fear to lose their credibility by linking their names to a failed initiative (Locock et al., 2001).

There is a complex balance between resourcing and supporting the opinion leaders and allowing them to draw on their natural, informal influence channels. This issue becomes evident when opinion leaders have their roles formalised, e.g. through workshops or training meetings; and when they assume management responsibilities, blurring the line between opinion leadership and administrative leadership (McLaren et al., 2002). As earlier mentioned, in this study's setting opinion leaders were frequently promoted to management positions as a form of recognition. Such new positions were a double-edged blade. If on one side the promotion improved pride and status of the opinion leaders, on the other, it threatened their social influence because of the association of their image with the management authority and institutional problems.

Pereles et al. (2003) analysed the experience of opinion leaders in a US geriatric care setting. Adopting a formal role was considered challenging by the opinion leaders, even though they might be accustomed to being sought for advice on an informal basis. The reluctance in assuming formal roles was related to lack of role clarification, leading to ambiguity and loss of direction, and discomfort with others' perception of self-promotion, elitism, or arrogance. Similarly, in a survey of Canadian general practitioners, Ryan et al. (2002) observed better results of opinion leader-led education when the opinion leaders were resourced, but allowed to self-direct the educational process. The authors suggested that informal influence was an instance of intrinsically motivated behaviour and that recognition and reward could reduce the motivation to behave in influential manners.

When opinion leaders self-direct the process of influence, the communication with their peers is more likely to emulate the task-oriented and needs-based

information exchange that happens in informal relationships, thus facilitating social influence to occur (Mano-Negrin and Mittman, 2001). Informal communication and interaction between opinion leaders and peers have been related to the successful diffusion of innovations (Rogers, 2003; Greenhalgh et al., 2004). It seems that asking opinion leaders to persuade others or promote innovations in ways they normally would not do can reduce their motivation and risk their status and credibility. The delicate trade-off between engaging opinion leaders in innovation projects and jeopardising their natural social influence (David Johnson, 2012) imposes a challenge to interventions based on opinion leaders and may explain the difficulties with harnessing the observed effects of opinion leaders in naturalistic, non-experimental settings, during planned interventions.

In terms of characteristics of the innovations, five attributes have been shown to accelerate the rate of adoption when perceived by potential adopters: relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2003). Systematic reviews support the prominence of relative advantage, which is defined as perceived improvement over what the innovation will replace (Greenhalgh et al., 2005), and also point to the importance of complexity (perceived difficulty to understand and use the innovation) and compatibility (alignment of the innovation with the experiences, values, and needs of potential adopters) (Kapoor et al., 2014). A sixth attribute, potential for reinvention, was later incorporated by Rogers to this framework; it seems to be particularly relevant for innovations that expand through peer networks and to be related to sustainability of adoption (Greenhalgh et al., 2005). Quality of the evidence was also associated with compliance to medical guidelines, alongside compatibility and low complexity (Grol and Grimshaw, 2003)

Consistently with the literature, in my experience the perceived advantages of the innovations seemed to facilitate buy-in to innovations. While some opinion leaders had a previous interest in the innovation topic, most were motivated by the benefits that they observed in the experiences of the first adopters. One example of how perceived advantages, alongside with low complexity, facilitated buy-in of innovations was the faster implementation of nursing protocols when compared to advanced access. The nursing protocols offered clear benefits in terms of professional autonomy and clinical efficacy, and although there was a perceived risk of professional litigation, no such cases happened during the time I worked in the organisation. In contrast, advanced access was controversial - the assumption that seeing patients when they needed would help to tackle the backlog of patients was counter-intuitive to most practitioners - and demanded extra work, team coordination and new skills.

Despite the evidence on the role of some innovation attributes in facilitating adoption, other authors have argued that it is indeed the fit between the innovation and group norms and values that matter. That was identified as a third context factor in this theory. Klein and Sorra (1996) proposed that implementation is a function of organisational climate and fit of the innovation to local values, and Fitzgerald et al. (2002) suggested that the quality of scientific evidence was not by itself a driver of diffusion. These authors also argued that single adoption decisions were not the rule, but that local individuals and groups established the credibility of innovations through interpretation and negotiation. Opinion leaders have a mediating role in this process, actively seeking, reinterpreting, and shaping innovations to their local contexts. If the innovations were compatible with the group standards of practice and professional values, the opinion leaders had their leadership reinforced by being associated with such innovations, what was rewarding and motivating for them. Conversely, innovations contested in the professional groups attracted criticism, what undermined the motivation of the opinion leaders or prevented their involvement.

4.2.4 Initial programme theory 1

In summary, evidence from the stakeholders' views and previous research point to the hypothesis that the institutional recognition of opinion leaders and the assignment of tasks in organisational change improve their pride, self-esteem, social status, and commitment to work, promoting innovative, collaborative, and persuasive behaviours. Additionally, the direct contribution to innovations, e.g., by producing or adapting guidelines promotes ownership of the innovations and a wish to see it spread.

Opinion leaders who assume formal roles or management positions may feel split between two groups; the resulting tension may reduce their motivation to engage in influential behaviours about the innovations. There is a trade-off between engaging and spoiling opinion leaders, and balance is needed between the benefits of granting their support and the risk of by doing so jeopardising their influence.

Perception of organisational support to the innovation and the influential role is an antecedent of the opinion leaders' buy-in to innovations, reducing the perception of risk associated with engaging in innovation projects. Previous interest in the innovation topic can facilitate buy-in by making the involvement in change intrinsically satisfactory, but most frequently opinion leaders and their

peers are motivated by perception of advantages to current practice and fit of the innovation to needs and values of the practitioners' group.

By articulating the elements explained in this section, I developed initial theory 1, presented next.

Initial theory 1 - Engaging opinion leaders in innovation

Recognising the experience of opinion leaders with innovations and assigning them responsibilities in implementation improve their pride, self-esteem and social status, and promote a sense of participation in change and ownership of innovations. Improved self-esteem and status will lead to more work commitment, innovative and collaborative behaviours, and ownership will promote buy-in and active support to innovations. Buy-in and support will result if the opinion leaders are interested in the innovation topic; if they perceive advantages to current practice in adopting; if the innovations fit the values and beliefs of their professional group; and if there is organisational support to the innovations and the opinion leaders. The opinion leaders' buy-in and support will also contribute to a climate conducive to change and facilitate acceptability and adoption by their colleagues.

4.3 Initial theory 2: bringing credibility to innovations

The initial theory 2 attempts to explain how the participation of opinion leaders in implementation transfer credibility to innovations, facilitating acceptability. The programme designers expected that the opinion leaders' involvement would elicit a sense of participation in change, reducing resistance and facilitating engagement of practitioners (Zepeda et al., 2013b; Zepeda et al., 2013a). This hypothesis was elicited by the consulted stakeholders to explain the positive reception to access guidelines and nursing protocols produced in opinion leader-led workgroups.

I identified potential mechanisms to explain this transference of credibility drawing on the literature on social influence (Greer, 1988; Mano-Negrin and Mittman, 2001) and characteristics of opinion leaders (Katz, 1957; Valente and Davis, 1999; Greenhalgh et al., 2004; Thompson et al., 2006). Opinion leaders are credible members of local groups, so their colleagues look for their advice and example in situations of uncertainty. Their endorsement highlights innovations as new standards of practice, raising interest, reducing restraints, and promoting intention to adopt. Therefore, trust in the opinion leader and change of group norms emerged as potential mechanisms.

Concerning the context, uncertainty about innovations seems to stress the need for the advice of credible colleagues (Greer, 1988; Anderson and Whall, 2013) Characteristic of the opinion leader like similarity to peers and accessibility (Rogers, 2003), personal integrity (Katz, 1957) or conformity to group norms (Mano-Negrin and Mittman, 2001) make them credible. Conversely, opinion leaders too distinct from their peers, e.g., too innovative; or who were seen to deviate too much from the group consensus, e.g., excessively enthusiastic about contested innovations seems to inspire less trust. Programme designers also highlighted the importance of personal relationships between opinion leaders and peers as facilitators of trust in the opinion leaders.

4.3.1 Acceptability of innovations and intention to adopt

The expected outcome of the initial involvement of the opinion leaders in implementation was reduced resistance and better acceptance of innovations among practitioners (Zepeda et al., 2013b; Zepeda et al., 2013a). Here I define acceptability as 'the perception among implementation stakeholders that a given treatment, service, practice, or innovation is agreeable, palatable, or satisfactory' (Proctor et al., 2011, p.67). Acceptability relates to innovation attributes like perceived complexity and relative advantage (Rogers, 2003).

Acceptability is not equivalent to opinion change, which is a verbally expressed position about the innovation and may have distinct meanings and consequences depending on its underlying motivations (Kelman, 1961). For example, practitioners may express a favourable opinion about innovations only to avoid isolation within their professional group. Acceptability is also distinct from adoption, the outcome of initial theory 3, which represents overt behaviour change that will only occur under certain contextual conditions, e.g., appropriate background and skills, or support from teammates and managers. The mechanisms leading to each outcome should then be different, so that acceptability and adoption were assigned to distinct theories. As a bridge between acceptability and adoption, I included the intention to adopt (Proctor et al., 2011) as part of both outcomes.

Previous implementation studies have stressed that the processes involved in awareness, acceptability and adoption are distinct (Lomas, 1993; Pathman et al., 1996). However, such distinction is not consistently treated in the literature about opinion leaders. In trials, the effects of opinion leaders in the attitudes and intentions of health professionals have usually been indirectly mentioned, usually as antecedents of observed behaviour change. A trial of opinion leaders versus written feedback to improve cardiovascular treatments in US hospitals showed

more adoption of beneficial drugs (e.g. aspirin) in the intervention group, what was explained as a function of the role of opinion leaders in adapting the research evidence into more acceptable clinical protocols (Soumerai et al., 1998). A critical analysis of this same trial using a social influence theoretical framework suggested that the opinion leaders' support for the project reduced the perception of risk and the time required to achieve buy-in of the new protocols (Borbas et al., 2000). In another opinion leaders trial among US primary care doctors, improvements in the prescription of cardiovascular drugs were attributed in part to the opinion leaders effect in the perceived acceptability of, and intention to perform, the prescribing behaviour; they facilitated behaviour change through reinforcing positive norms about prescribing the drugs (Bloomfield et al., 2005).

The only example I found of a trial that assessed the effects of opinion leaders in attitudes and intentions was a study of opinion leaders to improve obstetric care in Argentina and Uruguay (Althabe et al., 2008). Besides the measures of change in the management of labour, that trial included a survey of readiness to adopt or maintain behaviour change. Based on significant effects in readiness to change, the authors suggested that the intervention worked in part through changing attitudes and intentions of the providers for performing active management of labour. The effects of opinion leaders in improving the acceptability of innovations and creating a climate conducive to collective change were also shown in case studies of innovations in the NHS (Locock et al., 2001; Fitzgerald et al., 2002).

4.3.2 Trust and group norms

The two mechanisms developed to explain the transference of the opinion leaders' credibility to innovations, trust and group norms, seem to feed and complement each other. Programme designers emphasised that opinion leaders were able to change group perceptions about innovations because the other practitioners trusted them as peers. They were members of the same local groups with similar problems, concerns and goals; therefore, they were expected to act in the best interest of the group when assessing and adapting innovations. Mittman et al. (1992) also suggested that the role of opinion leaders in the implementation of clinical guidelines is mediated by trust and normative influence. By discussing and demonstrating innovations, opinion leaders help their colleagues to develop new shared meanings, increasing the perception of subjective norms favouring the innovation. They also send to their group the message that the old practices are no longer appropriate, reinforcing peer pressure to conform to the innovations. Their ability to dictate group norms is

given by their position as true members of their groups who have similar objectives and face similar constraints, what makes them trustworthy.

The influence of peer opinion leaders, in particular (chapter 2), seems to be based on a sense of trust derived from the fact they are in similar positions in the organisation. Therefore, they are seen as able to understand their colleagues' daily lives (Locock et al., 2001), or 'walk in their shoes' (Borbas et al., 2000). A study of diffusion of electronic medical records among physicians of a US hospital (Zheng et al., 2010) analysed three types of networks: friendship, professional, and perceived influence. Only friendship networks had a significant influence on the physicians' adoption of the new system. The authors suggested that identifying opinion leaders who show personal intimacy with many colleagues could accelerate innovation diffusion in medical social spaces. Similarly, Battilana and Casciaro (2013), studying social networks of NHS managers found that those more central in informal networks were more successful in promoting change, what they attributed to a sense of social obligation and reciprocity present in personal relationships.

Opinion leaders seem to influence the way their groups perceive the risks, benefits and appropriateness of innovations, as demonstrated in two studies which explored the influence of opinion leaders in innovation adoption in medical communities. In the first study, Greer (1988) interviewed community hospital physicians of the US, UK and Canada and observed that although they learned about innovations from sources like conferences or literature, when considering adoption they turned to the practical experience of close colleagues. They valued the opinion of colleagues because of the perception that such colleagues had practical experience in similar conditions and were objective about the advantages and problems of the innovation. Opinion leaders facilitated local discussion about risks, benefits, and the appropriateness of innovations to group values. The other doctors trusted their assessment because they were perceived to be competent in the topic and dedicated members of the local group. In the second study, Gabbay and le May (2004) used an ethnographic approach to explore decision making of GPs and nurses in two general practices in England. They found that, rather than directly assessing research evidence or other formal sources, the practitioners largely relied on tacit knowledge derived from the experience of trusted sources, mainly opinion leaders and other colleagues in their local networks.

4.3.3 Climate of uncertainty; similarity, integrity and accessibility; and personal relationships

The need for the advice of opinion leaders is greater in situations of high uncertainty about innovation when clear information is not available, and the professionals are looking for frank advice based on practical experience with the innovations in similar contexts (Borbas et al., 2000). Rather than directly assessing the quality of information by themselves, practitioners take shortcuts to acquire what they consider to be the best information about the innovations from trustable peers in their professional and local networks (Gabbay and le May, 2004). They seek colleagues as sources because the information they provided seems relevant to local practice, objective about the advantages and problems of the innovation, and based on worked experience with the innovation in similar conditions. As said by a doctor quoted by Greer (1988, p.9,12): 'You have to go to your colleagues to hear about the bugs. … I mean if you were going to buy a non-stick fry pan (sic), wouldn't you want to talk to someone who had one? …'.

Besides uncertainty that creates the need for the opinion leaders, the perceived similarity was identified by programme designers as a key determinant of the reliance on their opinions about innovations. The tendency of individuals to associate with similar others has been defined as homophily (Rogers and Bhowmik, 1970; Miller et al., 2001), and may refer to similar status or values between the individuals involved in communication. In this programme theory, it refers mainly to background and position in the organisation, as illustrated by the fact that most opinion leaders were doctor or nurse practitioners like their peers.

The importance of homophily to opinion leaders' influence can be assessed by negative examples. Individuals who are distinct in terms of background, role in the organisation or values tend to be less influential. Distinct backgrounds raise concerns about the appropriateness of the judgements of the opinion leader. In an exploratory study about the characteristics of opinion leaders in general practice in Norway, Flottorp et al. (1998) observed explicit scepticism about 'experts' or super-specialists, e.g. lipidologists, which the GPs saw as unable to understand the complexity and uncertainty of general practice. Excessive enthusiasm of opinion leaders for innovations may be seen as a lack of objectivity in their judgement (Ryan et al., 2002). The perception that the opinion leaders had secondary interests in the innovation process has been associated with mistrust and disengagement of their colleagues from improvement initiatives (Locock et al., 2001).

Excessive innovativeness may also reduce the credibility of opinion leaders, which arises in part from the conformity to group norms that confers them the status of feasible behaviour models (Rogers, 2003). Opinion leaders are usually not innovators, but early adopters that follow the innovators when they perceive that group norms will change (Valente and Pumpuang, 2007) (Rogers, 2003).

Innovative behaviour may be seen as deviance from group norms. In a social network analysis of Italian hospital physicians, Mascia et al. (2013) found that groups with higher adoption of evidence-based medicine were isolated within the hospitals and viewed by the colleagues as 'elitists' who do not follow the local rules of practice. In this study's setting, opinion leaders who were involved in several innovation projects or became overly identified with the programme designers had their credibility 'worn out'.

Programme designers also mentioned that the opinion leaders had the respect of their peers because of the perception that they had positive attributes like consistent acts and speech, dedication to the team, and willingness to advise and support colleagues. Based on the literature, I aggregated these features under the concepts of integrity and accessibility. By the other side, expertise in the innovation topic, which is a characteristic of opinion leaders in studies with both doctors (Grimshaw et al., 2006) and nurses (Andrews et al., 2014), was less mentioned. This is not surprising and reflects the fact that the opinion leaders in this study were mostly of the peer type, whose credibility is more based on informal and tacit knowledge than academic authority (Locock et al., 2001; Greenhalgh et al., 2005, p.121).

Integrity was associated by programme designers with consistent acts and speech and dedication to local clinical practice. Opinion leaders apparently had more respect from their peers when they were seen to live up to their public opinions; when they showed critical sense by not 'blindly buying' innovations; and when they prioritised patient care and support to their local teams over other commitments, including the contribution to the innovations. Other authors have identified consistent actions and beliefs as determinants of the opinion leaders' credibility and influence (McCormack et al., 2013; Anderson and Titler, 2014). Commitment to local practice expresses the opinion leader's continuing membership to the group of local practitioners, and their understanding of the local context of practice (Greer, 1988). Because of such position of 'insider', their judgement of innovations in deemed objective and reliable (Dearing, 2009). They can establish which innovations are worth the attention of the group (Mittman et al., 1992; Mano-Negrin and Mittman, 2001).

Accessibility is represented by the willingness to advise and support colleagues to deal with innovations. It is one of the core attributes of opinion leaders in innovation diffusion theory, alongside technical competence and conformity to the system's norms (Rogers, 2003). Accessibility is related to humanism in the conceptualisation of the educationally influential physician, which refers to 'treating others as equals' (Ryan et al., 2002); and to the central location of opinion leaders in networks, or 'whom one knows' (Katz, 1957).

Informal relationships seem to facilitate the establishment of trust between the opinion leaders and peers. Friendship relationships are characterised by personal intimacy, emotional ties and a sense of reciprocity, all of which increase trust between the parties (Mcallister, 1995). Technical advice networks can be important for promoting awareness of new guidelines, but adoption seems more influenced by trust and friendship networks (Collins et al., 2000).

4.3.4 Initial programme theory 2

In summary, evidence from the stakeholders' views and previous research suggest that the participation of opinion leaders in endorsing, producing or disseminating innovations clarifies risks and benefits and builds trust in the innovations, reducing resistance to change and improving acceptability among practitioners. Relatedly, the endorsement and contribution of the opinion leaders to innovations improve the perception of subjective group norms favouring the innovations, promoting more intention to adopt.

The ability of the opinion leaders to transfer credibility to innovations is facilitated by a climate of uncertainty about innovations, which creates a need for their advice; when their colleagues perceive them as similar in terms of background, organisational role, and work setting, so they understand the local context and provide useful advice; when the opinion leaders are perceived to express integrity and accessibility so that they are expected to act in the best interest of the group and to be available for the colleagues; and when there are personal relationships between opinion leaders and peers, which are usually associated with trust and reciprocal actions.

The opinion leaders can lose credibility when their behaviour is too distinct from the group, e.g., too innovative, what makes them deviate from the group standards, or too enthusiast in support of innovations, what can be interpreted as lack of objectivity or private interests in the innovation process.

By articulating the elements in this section, I developed the initial theory 2, presented next.

Initial theory 2 - Bringing credibility to innovations

The participation of opinion leaders in implementation of innovations contributes to building better understanding and trust in the change process and changing subjective norms about the innovations within their social groups. Trust in innovations and favourable group norms will reduce resistance, improve

acceptability, and promote more intention to adopt innovations. Acceptability and intention to adopt will result if there is a climate of uncertainty stressing the need for information and advice; and if the practitioners perceive the opinion leaders as similar, consistent and accessible, and have informal relationships with them, what makes them trustworthy. Trust in the opinion leaders and attribution of positive features will also facilitate the imitation of their behaviour concerning innovations.

4.4 Initial theory 3: promoting innovation adoption

In initial theory 3, I cover distinct ways in which the experiences of opinion leaders with innovations might influence the adoption behaviour of their colleagues. Programme designers were consistent in saying that the opinion leaders' examples had different effects over different practitioners. They encouraged practitioners who were interested in the innovations but wanted to see someone trying first; pushed reluctant practitioners to comply with innovations to avoid staying behind and alienated from the change process some colleagues who could not keep up with their examples. I developed these threads as interconnected mechanisms of a multifaceted theory to explore how the same programme resource was interpreted and acted upon in different ways, by different participants, in different positions (Pawson, 2013).

Drawing upon clues of the programme designers and the literature, I identified context factors to explain the divergent causal processes outlined above. First, the degree of interest in the innovations; practitioners who were already keen on adopting innovations could see the examples of opinion leaders as a source of confidence, while others could need other context factors. Second, two factors already integrated into programme theory 2 enable the processes of imitation or comparison underpinning this theory's mechanisms: uncertainty about innovations, which highlights the need for the opinion leaders; and homophily, which makes their experience transferable to the other practitioners' situation. Third, the climate of imminent change and peer pressure, which could make reluctant practitioners conform to the innovations to preserve professional status.

Examples of this multifaceted theory in the study setting were seen in the range of distinct reactions to the opinion leaders' examples, as observed by programme designers after the Access Workshops. Some professionals were inspired by the examples and promptly adopted advanced access, even becoming new opinion leaders; some were embarrassed by the examples and started small changes to avoid a negative image; some did not change at all. Some teams had such severe

structural problems that change was not a feasible option, and in some teams, the examples provoked envy and reinforced opponent opinion leaders.

4.4.1 Intention to adopt, adoption and resistance

The outcomes of this theory included both adoption and resistance to innovations. Change in professional behaviour, in particular in the clinical management of diseases, has been the outcome assessed in most opinion leaders' trials (Greenhalgh et al., 2004; Lau et al., 2015; Flodgren et al., 2019). See chapter 2 for a review of this evidence. The opinion leaders' trials have been limited to investigating nuanced outcomes as I observed in this study, e.g., compliance without an agreement, forced or superficial adoption, and passive resistance. Most insights into these intermediate outcomes came from the programme designers consulted.

I defined adoption as intention, initial decision, or action to try or employ an innovation (Proctor et al., 2011, p.69). Intention to adopt establishes a continuum with the outcomes of initial theory 2. One reason to consider intention, decision and action under a common definition is that the opinion leaders in this study were expected to influence the behaviour of colleagues about innovations but have limited control of resources or other structural determinants of change. In a trial of opinion leaders in obstetric care (Althabe et al., 2008) the improvement in readiness to change was considered evidence of the intervention effect, while behaviour change was deemed also depend on other factors like administrative directives. Opinion leaders are usually involved in informal persuading activities (Flodgren et al., 2019), and draw their influence from the control of knowledge and information rather than formal positions or control of resources (Burt, 1999).

To account for the interaction between social influence and structural barriers in the expression of behaviour change, I included structural barriers and facilitators in the context of this theory. One example of such interplay between change agency and structure was the story of the Bellevue clinic, which will be analysed in chapter 7. In short: opinion leaders were mobilised by middle-managers to support a team which faced severe barriers to adopt advanced access, in particular an overwhelming excess of patients; a context of structural and staff renewal facilitated the reluctant acceptance of initial changes; implementation ultimately failed due to persistence of the initial barriers.

Most definitions of adoption imply that it is a rational process based on perceptions of advantages in the innovations, for example Rogers (2003) refers to the decision to adopt an innovation as the best course of action

available (although this author also discusses the limitations of such a pro-innovation view). This perspective also underpins the opinion leader trials, most of which tested evidence-based practices which were deemed more advantageous than current practice. However, studies using other approaches have highlighted that the process of adopting innovations is in fact, complex, non-linear and even non-rational. Previous research demonstrated that opinion leaders had mixed influence in implementation: they are key for the success of the projects, but also have negative influence in other instances, e.g. when showing ambivalence, neutrality or hostility towards innovations; or 'hijacking' the projects for their agendas (Locock et al., 2001). These findings were consistent with what I observed in this study. Therefore, I developed a specific causal process to explain how comparison with the opinion leaders enhanced resistance to advanced access in some cases.

Last, in this theory I considered resistance as a negative outcome from the perspective of the programme designers but not necessarily from the perspective of practitioners. I tried to avoid in this evaluation a 'pro-innovation' bias (Rogers, 2003), or the trend to analyse the innovation process from the perspective of the promoters. Not all innovations are useful, and resistance in some instances can be a rational choice, e.g., when innovation is deployed without sufficient information or resources, carrying risks like malpractice or disruption for the services. In my experience, there were situations in which structural barriers to advanced access, like massive demand of patients over incomplete teams, overshadowed any potential or actual effects of social influence. In such cases, non-adoption was more a function of structural problems than a matter of individual blame (Ferlie et al., 2005; Greenhalgh et al., 2010; Greenhalgh et al., 2017).

4.4.2 Improved confidence, conforming behaviour and unfair comparison

Drawing upon the initial theoretical framework of the study (chapter 3), I developed three mechanisms to explain the distinct responses to the opinion leaders' examples, respectively: adoption of the innovation; conformity despite restraints; and increased resistance or alienation from the change process.

In the first hypothesised mechanism, the opinion leaders' examples reduce uncertainty about the innovations among their colleagues, leading to more adoption. For those who are interested in innovation but are afraid of not being able to deal with it in practice, observing and discussing the experience of opinion

leaders will change the perception of feasibility and advantages, reduce fear and improve confidence, encouraging adoption trials. In this mechanism, the opinion leaders are sources of information and role models; and adopting innovations is an opportunity to improve practice and solve problems. For example, one programme designer suggested that practitioners who were not enthusiasts of advanced access but were also not happy with current practice could see in the innovation a feasible and tested solution to the growing demand pressure.

This 'confidence' mechanism fed on the diffusion of innovation and social cognitive theories, both of which seek to explain how individuals change their behaviour as a result of communication with other individuals (Bandura, 2006). The diffusion of innovations theory states that the diffusion process is based on the modelling and imitation of the experiences of similar and close peers with innovations (Rogers, 2003). Observing worked examples provided by opinion leaders would lower the uncertainty and perceived risk associated with the consequences of adopting a given innovation. The practical examples also provide opportunities for discussion in peer networks, creating an atmosphere of interest conducive to adoption.

The social cognitive theory (Bandura, 1977; Bandura, 1988) proposes that the observation of others' successes and failures affects the belief in one's capacity to perform that same behaviour. In other terms, observational learning affects perceived self-efficacy. People will try to do what they think they can do and will not try what they think they cannot do. The degree to which such observation affects one's behaviour is related to how much the observed model is perceived as similar, allowing the transferability of the observed lessons to one's situation. Bandura (2006) connected innovation diffusion and social cognitive theories and proposed some ways in which modelling would affect the adoption of innovations: informing and instructing about innovations; motivating others by showing advantages and potential benefits; changing the evaluative standards of their social groups; advocating for the innovations and encouraging others to adopt. The process of diffusion is multi-patterned and influenced by the agency of the individual and collective actors involved.

In the second mechanism, awareness of practice gaps in comparison with the opinion leaders leads to adoption to preserve the professional image. This mechanism relies on the assumption that showing the feasibility of innovation will only convince those who are already interested. For those who are not particularly interested in the innovation, the examples of opinion leaders will expose practice gaps, weaken excuses to non-adoption, and cause embarrassment; if they perceive that change is imminent, they will conform to what they perceive to be new standards for someone in their role and position to avoid being 'left behind'.

Adoption here does not follow insight into the advantages of the innovation but rather a wish to avoid social sanctions. In this mechanism, the opinion leaders reinforce social pressure in favour of innovation adoption; adopting the innovation helps to preserve status among their peers. For example, one programme designer observed that a local manager who initially opposed the nursing protocols became an enthusiast supporter because s/he wanted to preserve the status and position, and non-adopting was becoming unpopular within the professional group.

Since the formulation of the two-step flow hypothesis (chapter 2), it has been suggested that opinion leaders work as sources of pressure to conform to the group way of thinking and acting, helping to bring outliers into line through processes of peer comparison (Katz, 1957). Opinion leaders would develop and transfer new group norms, persuading the practitioners that 'non-conforming practices are outdated, inappropriate, not supported by research evidence, and no longer accepted by colleagues and peers in other health care delivery settings' (Mittman et al., 1992, p.418). Similar inferences were made in studies with community opinion leaders: they would monitor the climate of opinion and act when a change of norms is imminent, accelerating adoption through increasing the social costs of non-adoption (Valente and Pumpuang, 2007). The adoption behaviour of the opinion leaders would signal to the others that a new group consensus is emerging. The practitioners would then be expected to incorporate the innovations into their practice if they wanted to avoid being outside the parameters of current best practice.

A related explanation was proposed by drawing on the reanalysis of the dataset of the Medical Innovation study (chapter 2). Burt (1987) suggested that the adoption of the new drug in that study was determined not by social contagion but by structural equivalence. In other terms, it was not so much the direct communication with other individuals that triggered behaviour change among the doctors, but their perception that others of similar status, independently of being people with whom they frequently communicated, were adopting the new drug. In Burt's words, 'once the occupants of his status begin adopting, ego is expected to follow suit rapidly in order to avoid the embarrassment of being the last to espouse a belief or practice that has become a recognised feature of occupying his status' (Burt, 1987, p.1294). The combination of adoption by opinion leaders, a climate of imminent change, and embarrassment for exposure of practice gaps could explain why some practitioners conformed to advanced access even without an agreement with its principles. In such cases, adoption was motivated by feelings of envy, relative deprivation, or advantages rather than an interest in the innovation and wish to improve practice.

This 'conformity' mechanism is another instance of normative influence, as the 'group norms' mechanism of theory 2. The difference is that, while in theory 3 action is taken to avoid rejection or sanctions, for theory 2, the driver for action was a wish to reinforce the association with the opinion leaders' group.

Last, a third mechanism explains how the opinion leaders' examples might contribute to discouraging some practitioners or reinforcing initial resistance to innovations. Examples of the study setting included opinion leaders too innovative for the group standards; overused by the programme designers as 'benchmark' over time; or used in judgemental comparisons to pressure colleagues. In such cases, the examples of opinion leaders triggered reactions of self-depreciation, envy, of unfair comparison which shut down the practitioners to innovations. In such cases, adoption will only occur if forced by other mechanisms like administrative directives or incentives.

Opinion leaders too innovative may be seen as too distant models and make the practitioners feel unable to keep up with the expected standards, triggering defensive attitudes. Strong opinion leaders have been observed to alienate colleagues from innovation projects in the NHS, making them feel excluded, or unable to keep up with the examples (Locock et al., 2001). Drawing on social cognitive theory, seeing the opinion leaders as too high standards to be imitated could impact negatively on the practitioners' perception of their ability to perform the innovative behaviour, reducing self-efficacy (Bandura, 1977) and thus preventing innovation adoption.

4.4.3 Interest in the innovation, climate for change and structural barriers

One key context factor determining distinct causal pathways in theory 3, interest in the innovation, was already introduced in the previous subsection and will be briefly recapitulated here. For practitioners interested in an innovation, the examples of opinion leaders work as a proof of concept, improving their confidence and motivating adoption trials; for those who are not interested, the examples could still work as peer pressure and sign of imminent change, prompting conformity to the innovation; or lead to alienation through feelings of incapacity and unfairness.

Other two context elements which were included in theory 2, uncertainty about innovations and homophily between opinion leaders and peers, are also relevant to trigger the mechanisms of theory 3; next, I will detail the distinctive aspects that justify their inclusion here.

Uncertainty makes people especially likely to look towards similar others for evidence of how to act, stressing the need for the advice and experience of opinion leaders. Anderson and Whall (2013) postulated that opinion leadership develops under conditions of uncertainty when credible individuals willing to share their opinions are available to act as a resource for uncertain staff members. When opinion leaders share their subjective evaluations and worked examples, they help to decrease uncertainty about the practicalities and consequences of adopting an innovation.

Homophily facilitates the application of the opinion leaders' experience to the observer's situation, reinforcing beliefs of self-efficacy and promoting imitation of the observed behaviour. This process roughly corresponds to the construct of vicarious experience in social cognitive theory: the observation of someone perceived as similar succeeding in a given behaviour raises positive beliefs about self-efficacy, while observing similar others fail would undermine the disposition of the observer to try the same behaviour (Bandura, 1977; Bandura, 1988). The influence of homophily or heterophily in the mechanisms of the initial theory 3 was also evident in the negative examples described in the previous section, e.g., when innovative or enthusiastic opinion leaders alienate colleagues from the change process.

Besides interest, uncertainty and homophily, two new context factors were added to theory 3: a climate of imminent change reinforcing peer pressure, and non-addressed structural problems annulling social influence. A climate of change in the institution will demand that the practitioners take a position about the innovations. Growing adoption in the professional group and the support of opinion leaders to innovations will create peer pressure to adopt. The sum of institutional drive and peer pressure explains the conforming behaviour of those practitioners who had more restraints to the innovations.

Climate for change relates to 'implementation climate' and 'readiness for change' in the Common Framework for Implementation Research (CFIR) (Damschroder et al., 2009, p.57). Implementation climate is 'the absorptive capacity for change, shared receptivity of involved individuals to an intervention, and the extent to which use of that intervention will be rewarded, supported, and expected within their organization'. Readiness for change, in turn, also includes specific tangible and immediate indicators of organisational commitment to its decision to implement an intervention.

While a climate for change is part of the context in the CFIR, other authors have positioned it as the outcome of change agency strategies (McCormack et al., 2013). Likewise, in my study, climate for change is part of the context in initial

theory 3, and an outcome in initial theory 1, as a consequence of the buy-in of opinion leaders to innovations. The label of a theory element in realist studies depends on what aspects of the intervention are in focus; no element 'is', by nature, a context, mechanism or outcome, they rather play one or other function in specific CMO configurations (Westhorp, 2018).

Last, structural barriers impact negatively in the capacity to implement changes by overshadowing the effects of other implementation strategies like opinion leaders. Problems like excess of patients per doctor, insufficient staff, or inadequate physical structure were common in the study setting and imposed practical limits to innovation in some clinics. Structural barriers also reduced overall receptiveness to change and contributed to negative attitudes towards innovations and opinion leaders. Practitioners working in hard conditions were especially prone to feel the comparison with opinion leaders as unfair, especially if they perceived that the opinion leaders had some advantage, e.g., fewer patients or better management support. Non-addressed barriers in this theory partially relate to 'structural characteristics' in the CFIR, which include the stability of teams and administrative intensity, both positively associated with the success of implementation (Damschroder et al., 2009). In my experience, insufficient staff, high staff turnover and weak administrative support were indeed important barriers to innovation in the study setting.

4.4.4 Initial programme theory 3

In summary, based on evidence from the stakeholders' views and previous research, I developed three interconnected causal processes to explain how the examples of opinion leaders with innovations affect the adoption behaviour of their colleagues, leading respectively to adoption, conforming behaviour, or resistance.

For practitioners who are interested in innovations but are unsure about the consequences of adopting in their setting, the examples of opinion leaders provide evidence of feasibility and advantages, improving their confidence and encouraging adoption trials. For more reluctant practitioners or those who do not agree with the innovations, the examples may still promote adoption when there is a climate of imminent change in the institution and professional group. In such a situation, the examples of opinion leaders highlight practice gaps and reinforce peer pressure, constraining the other practitioners to conform to the new standards to avoid social sanctions.

The examples of opinion leaders will trigger imitation or comparison if there is uncertainty about the innovations, stressing the need for local examples, and if the practitioners perceive them as similar in terms of background, organisational role, and work conditions. Conversely, too strong opinion leaders, e.g., innovative or enthusiasts, or with better work conditions may provoke feelings of inability, envy or unfair comparison and alienate practitioners from the change process or even trigger active resistance. Excessive use of opinion leaders as benchmarks may expose them to criticism and wear out their credibility. Non-addressed barriers like lack of staff or inadequate administrative support can reduce receptiveness to change and objective conditions to innovations, annulling the effects of social influence.

By articulating the elements in this section, I developed the initial theory 3, presented next.

Initial programme theory 3. Promoting innovation adoption

The experience of opinion leaders with innovations demonstrates feasibility, advantages, and risks, reducing uncertainty and improving confidence among practitioners. Improved confidence will encourage more adoption of innovations. Adoption will result if the other practitioners have interest in the innovations but are uncertain about the consequences of adopting, which highlights the need for reliable information from similar contexts of practice; and if the opinion leaders are seen as similar, so their experience is relevant to other practitioners.

The experience of opinion leaders with innovations also highlights practice gaps and reinforce peer pressure in favour of innovations. Perception of gaps and peer pressure will promote a wish to conform to perceived standards of practice ultimately leading to adoption. Adoption by conformity will result if there is a climate of imminent change demanding a position about the innovations; the other practitioners perceive potential social sanctions in keeping current practice and want to keep up with the standards of practice for someone in their group, and the opinion leaders are seen as similar to other practitioners, so their experience is comparable.

For some practitioners, being compared with opinion leaders may provoke feelings of inability or self-depreciation or be felt like a judgemental and unfair comparison. A sense of inability or unfair comparison will trigger defensive attitudes against innovations and opinion leaders. Negative perceptions and defensive attitudes will result if there is excessive pressure to change; the opinion leaders are too distinct from the other practitioners to function as feasible models;

the same examples of adoption are overused, exposing them to criticism and envy; or there are non-addressed structural barriers to change.

4.5 Initial middle-range theory

In this chapter, I presented the three initial theories of this study, alongside supporting evidence from the stakeholders and the literature. Figure 4.1 is a diagrammatic representation of the three initial theories as CMO configurations.

Figure 4-1 Initial programme theories

OVERALL ASSUMPTION

Recognising opinion leaders and involving them in implementation will improve motivation and confidence to change, build trust in innovations and reinforce conformity pressures among practitioners, facilitating acceptability and adoption of innovations

PROGRAMME COMPONENTS	CONTEXT	MECHANISMS	OUTCOMES	BROAD OUTCOME

Initial theory 1. Motivating opinion leaders

Institutional recognition of opinion leaders and assignment of implementation tasks

In the presence of

- Interest of OL's in innovations
- Perception of advantages
- Innovation fit to local groups
- Organisational support

Will trigger

- Improved pride, self-esteem and status of OL's
- Sense of participation and ownership of innovations by OL's

Which will generate

- Innovative and collaborative behaviour of OL's
- Buy-in and support of OL's to innovations

Leading to

Initial theory 2. Building trust in innovations

Involvement of opinion leaders in production, adaptation and implementation of innovations

In the presence of

- Credible OL's (integrity and accessibility)
- Uncertainty among staff, need for advice
- Similarity between OL's and peers
- Informal relationships

Will trigger

- Improved trust in the change process and credibility of innovations among staff
- Perception of group norms favouring innovations

Which will generate

- Reduced resistance of staff to change
- Acceptability of innovations
- Intention to adopt innovations

Leading to

A climate favourable to change, motivated practitioners, improved acceptability, adoption and sustainability of innovations

Initial theory 3. Promoting adoption of innovations

Dissemination of the experience of opinion leaders with innovations

In the presence of

- Interest in the innovations

Will trigger

- Improved confidence to adopt innovations

Will generate

- Adoption and sustained use of innovations

Leading to

- Lack of interest in innovations
- A climate of imminent change

Will trigger

- A wish to conform to practice standards

Will generate

- Superficial, *pro forma* adoption of innovations

Leading to

- Too strong opinion leaders
- Structural barriers

Will trigger

- A sense of inability or unfairness

Will generate

- Neutral/negative attitudes towards innovations

Leading to

Resistance to innovations

Differences between the innovations

As illustrated throughout the chapter, the initial theories did not play out exactly the same for the two innovations. Three key differences which were further confirmed in data analysis are highlighted next. First, advanced access opinion leaders were more likely innovators who were proud of their local achievements;

they were more clearly interested in the innovation and willing to collaborate with scaling up efforts. Not by chance, many became managers and programme designers. Second, perception of relative advantages (and low complexity) was more important for the nursing protocols, what was reflected on faster and wider adoption. Advanced access which was seen as complex and risky still faced important resistance after many years of mainstreaming efforts. Consistently, the demonstrative role of opinion leaders improving confidence of potential adopters or creating pressure to conform were more relevant for advanced access, while ownership and perception of the innovations as group norms were more important mechanisms for adoption of the nursing protocols. Third and relatedly, structural problems were a significant barrier to implementation of advanced access, which required changes in doctor-nurse communication, booking systems etc.; but not so much for adoption of the nursing protocols, which basically affected individual clinical practice.

Similarities across the three initial theories

Cutting across the three initial theories, opinion leaders seem to be local practitioners who have informal and close relationships with their colleagues. They are usually seen as similar, reliable and credible. Institutional recognition motivates opinion leaders to support innovations, and their participation in implementation reduces resistance of colleagues to adoption and facilitates collective behaviour change. Their effects on the behaviour of others are explained by an ability to increase trust in the change process and self-confidence among colleagues; and to affect group norms or reinforce peer pressure, what explain their ability to reduce resistance to innovations. Their influence is contingent on their engagement with the innovations, good relationships with the managers and target individuals, and a climate for change in the local groups and the organisation, while structural barriers to change limit their role in innovation. Drawing upon this tentative synthesis, I finish this chapter with an initial middle-range theory which shows the key causal processes that will be refined in the next chapters.

Initial middle-range theory

Recognising opinion leaders and assigning them responsibility in the implementation of innovations that match their interests and are adequately supported improve their motivation and buy-in of innovations. If they are credible and closely related to the colleagues, their contribution to implementation builds

trust in the innovations and changes group perceptions in favour of adoption, reducing restraints and facilitating readiness to change. Their experience with the innovations in local settings will show the feasibility and advantages of adopting, thus encouraging colleagues who were inclined to adopt. With growing adoption and a climate of imminent change, their examples will reinforce peer pressure and constrain reluctant practitioners to conform to the innovation.

Chapter 5 Engaging opinion leaders in innovation

5.1 Introduction

This chapter presents findings related to Programme Theory 1. I will explain how recognising opinion leaders and assigning responsibilities to them in implementation promote buy-in and support to innovations. In healthcare organisations, the professionals have the power to enact or block change, so their engagement is key to the success of implementation (Ferlie et al., 2005). The buy-in of opinion leaders to innovations should be seen as an antecedent of their social influence. Programme Theory 1 is a nested theory, which proximal outcomes are contextual factors for the other programme theories.

The initial theory shown in chapter 4 is repeated below.

Initial theory 1 - Engaging opinion leaders in innovation

Recognising the experience of opinion leaders with innovations and assigning them responsibilities in implementation improve their pride, self-esteem and social status, and promote a sense of participation in change and ownership of innovations. Improved self-esteem and status will lead to more work commitment, innovative and collaborative behaviours, and ownership will promote buy-in and active support to innovations. Buy-in and support will result if the opinion leaders are interested in the innovation topic; if they perceive advantages to current practice in adopting; if the innovations fit the values and beliefs of their professional group; and if there is organisational support to the innovations and the opinion leaders. The opinion leaders' buy-in and support will also contribute to a climate conducive to change and facilitate acceptability and adoption by their colleagues.

Guided by the initial theory, I identified elements and causal processes from data analysis. Then I compared the findings with the initial theory and modified it accordingly to generate the refined theory. The interpretations in this chapter have a greater focus on identifying causal processes than theory elements when compared with the chapter on the initial theories, reflecting a deeper understanding of the programme.

The mechanisms are presented alongside context factors to which they are contingent, consistently with a realist logic of generative causation. First, I describe how recognition of opinion leaders improves work satisfaction and motivates proactive, collaborative and innovative behaviour. Then, I show how

participation in production or dissemination of innovations promotes ownership, buy-in and support to innovations. Key aspects of the context are detailed in subsections. At the end of each section, small summaries spell out the causal processes that fed into the refined theory. A summary of the findings and the refined theory come at the end of the chapter.

5.2 Work satisfaction and intrinsic motivation

A recurrent topic in the interviews was how institutional recognition motivated the opinion leaders to support management in the implementation of advanced access and nursing protocols. Participants highlighted the sense of appreciation and satisfaction with work which resulted from being recognised as an opinion leader. In their view, these rewarding feelings improved motivation, work commitment, and support of opinion leaders to management initiatives. These outcomes were not observed only in relation to innovations, but as a broader proactive and collaborative attitude in work.

Institutional recognition

The relevance of recognition was reinforced by the institutional context at the time of the programme. As described in chapter 3, a rapid expansion of services with insufficient resources generated a scenario of overwork, sick leaves, stressed institutional relationships, and low receptivity to change (Zepeda et al., 2013a). Many practitioners felt that they were doing their best just in keeping the provision of care under the conditions they were given. They saw no reason to spend extra energy to change established practices. They believed that any change efforts would not make a difference, would not be noticed, or would not be rewarded, what was indeed the rule before the programme. This attitude of indifference or inertia was elicited by Bento to explain why colleagues in the same clinic would not adopt advanced access. Bento was a young family doctor who had advanced access opinion leaders as tutors during his family medicine training. He became an opinion leader himself soon after finishing his training.

> *Although there is a certain desire, or recommendation that access should improve, that the practices should advance, there is no accountability in fact, or a return or a premium, something like that... I think it's the opposite, I think these my fellow doctors, they end up seeing it like this, "But why to work harder if you're not going to have any benefit?". (Bento, doctor, opinion leader)*

In such context, the managers recruited opinion leaders with the intention of attenuating the inertia and pessimism of the staff and showing alternatives to

current practice. The strategy of the programme designers to implement innovations depended on the motivation and enthusiasm of these opinion leaders to catalyse change (Zepeda et al., 2013b).

Interviewed opinion leaders confirmed that their recognition as leaders brought a sense of appreciation and satisfaction in work. Such feelings motivated them to keep going and were related with observed behaviours like committing to work beyond strict job duties, collaborating with teammates and line managers in facing local problems, and promoting local innovation and change. For Bento, the invite to support other clinics in implementing changes brought motivation through showing the importance of his work.

> *I think this issue of being valued, for example when you are called by the district or management to attend a workshop as a facilitator, or as someone who will help to disseminate that knowledge, I think you have a recognition that is very important. For me, it works. I think it's the kind of thing that keeps you motivated, keeps you like this, "No, my job makes a difference". (Bento, doctor, opinion leader)*

Similarly, Murilo, one of the first doctors to adopt advanced access and who worked in a particularly difficult clinic, with poor infrastructure and in a deprived area, associated institutional recognition with a sense of pride and satisfaction. This sense would come from both the public acknowledgement received from the managers and patients, and a more intimate feeling of self-satisfaction.

> *It's like the satisfaction of the doctor, "Ah, I had a good consultation, I have good communication skills, I can finish the consultation well". And also, this thing of satisfaction, "The team is flowing, people are enjoying the clinic, the clinic is seen as a clinic that works, it's a reference." (Murilo, doctor, opinion leader)*

Additionally, the recognition helped Ivan, a doctor who enthusiastically adopted advanced access since his residency training in family medicine, to make sense of his professional trajectory, counterpointing feelings of invisibility and worthlessness which were common among the staff at that time.

> *The recognition that your work process is interesting, that you are doing well, that you are doing it right, that you are not simply a disposable piece, an unnecessary part of the system, no, you are a vital part, an integral part of the entire health system… The second issue that motivates you is the fact that your ideas are heard, your opinion is considered … Maybe it satisfies the ego the recognition that you have good ideas. It brings a personal satisfaction with what you have built, studied, events you attended, new experiences you went after, new contacts… It gives meaning to the path that you have travelled there. (Ivan, doctor, opinion leader)*

Motivated opinion leaders stood out against a work environment in which low satisfaction and inertia were the rules. Other practitioners who wished the same

satisfaction and status saw the innovative practice as a possible pathway. This was a point raised by Roberto, one of the earliest and more influential advanced access opinion leaders. He believed that his influence was related to the satisfaction in work he expressed. Roberto´s enthusiasm for innovating is a characteristic of some opinion leaders that I will develop in section 5.2.1.

> *In meetings, they see colleagues developing projects, see that they are not complaining, are even showing some degree of enthusiasm, or saying that it works. This might arouse a desire to resemble that colleague, maybe not in the sense of copying but, at least, to have that feeling that perhaps they could not find in her day-to-day work. (Roberto, doctor, opinion leader)*

The satisfaction expressed by the opinion leaders and the status coming from their institutional recognition seemed to motivate others to innovate themselves by creating positive expectations and expected benefits associated with the innovative behaviour.

Favouritism and unfairness

To the same extent that the recognition motivated some opinion leaders, it also contributed to demotivating potential leaders that were not recognised. Those involved in local and independent innovation were usually aware of their potential contribution to the organisation and expected some acknowledgement as payback. The failure to value their achievements frustrated expectations, causing deception, resentment and demotivation. These feelings were directed to the management, so non-recognised opinion leaders were less prone to support innovations sponsored by the organisation. This was summarised by Dora, a doctor and middle manager who strongly supported regional implementation of advanced access, in this way contributing to dissemination of this innovation across the organisation.

> *So, valorisation, yes, I think it's a mobilising factor, yes, and it's something that the institution often fails [to provide]. Because often you have those professionals that really give themselves away, do more than their function and are not always valued when they need something, for example. I'm not saying financial valorisation, but appreciation indeed, "Look, you make a difference, so you need that now, let's do it now"… So, I think that the fact that the institution does not adequately value those leaders, this also demotivates. (Dora, doctor, programme designer)*

In the example below, Ivan talks about the selection of tutors to a new educational programme. Some doctors who had training and experience, and felt worthy of recognition, were not selected as educational tutors. They became opponent

opinion leaders, passively resisting to local innovations and undermining the innovation (the training programme) in informal networks.

> *There are people who think so different from us that we purposely leave them out, even if they have leadership and training. We do not call them on purpose because we're going to bother. … It is not the fact of generating positive leadership that creates the antagonist. The fact of generating leadership only of the group that you like, the group that wants to come with you … And those people who felt marginalised of the groups, they gradually assumed a veiled antagonism that reverberated and created an antagonistic group that until today exists. (Ivan, doctor, opinion leader)*

The emergent and disperse nature of the programme meant that there was no uniformity in the selection of opinion leaders. The perception that opinion leaders were selected by non-objective criteria, like friendship or ideological affinity, damaged their credibility. The perception of favouritism in their selection led to a sense of distrust and unfairness, which could contribute to resistance to innovations and the emergence of opponent leaders. One programme designer referred to these "buddy opinion leaders" as cronies. Sometimes there were practical advantages associated with the opinion leader role, like flexible work hours or protected time.

In summary, recognising opinion leaders and involving them in implementation promoted a sense of appreciation and relevance, improved work satisfaction, and motivated their engagement in proactive and collaborative behaviours which included support to innovations. Institutional recognition helped to counterbalance feelings of invisibility, inertia and pessimism common in the institution. The lack of recognition of potential opinion leaders who were aware of their value and contribution to the institution generated resentment and reinforced opponent leaders.

5.2.1 Innovativeness and wish of distinction

The first opinion leaders were highly motivated individuals distinct from the average colleagues. The advanced access leaders were usually identified by middle-managers leaders from successful experiences of local changes in the access system (Zepeda et al., 2013b). The nursing protocols leaders were invited by the nursing committee leaders based on demonstrated interest and willingness to contribute to the work of the committee and recognised expertise in topics covered in the protocols. Aline, a young but clinically experienced nurse,

was invited to the committee after approaching the committee leaders and volunteering to support implementation of the protocols.

> *…and I was invited because I already had the interest before my arrival [at the organisation]. When I worked in other municipalities, we did not have protocols. So, when I arrived here, and I discovered that there were, I made a point of meeting the guys and I accepted to join [the committee]. (Aline, nurse, opinion leader)*

In common, opinion leaders of advanced access and nursing protocols actively pursued innovations, successfully implemented local change, and were active in professional and informal networks. They expressed a sense of purpose in work and a wish to differentiate from the crowd and be agents of change, as previously described for advanced access pioneers like Roberto and Ivan. Jean, quoted below, was a doctor who shared the same enthusiasm and passion for innovating of Roberto, with whom he worked since the undergraduate years.

> *… one view that as a professional one of my roles was to innovate, what was different from what was usually done. And I think there was this recognition of the people who were innovating and improving and qualifying. (Jean, doctor, opinion leader)*

Those were innovative leaders, for whom the involvement in change seemed intrinsically pleasant, rather an opportunity than a burden, reflecting a higher social purpose beyond usual commitment to care. They chose innovations which were congruent with their values and beliefs, and their participation in implementation seemed to satisfy a wish to feel distinct, responsible for a change in their environments. Aline was not related to this group of doctors but showed the same kind of personal commitment in relation to the nursing protocols.

> *Some colleagues, they really 'wear the shirt' because of an ideological belief in the SUS[4], of having a commitment to change care, to focus on the patient, to see themselves as users of that system or potential users. And they bring this to personal life, like, I don't know, like a flag. While other people are taking their roles there thinking only of their salary and cannot bring that into a more personal context. (Aline, nurse, opinion leader)*

These observations were consistent with previous evidence suggesting that opinion leaders differ from non-leaders in terms of their willingness to take more risks and ability to handle the threat of public individuation (Weimann, 1994).

5.2.1.1 Roberto's story

The best example of an intrinsically motivated opinion leader was Roberto, an innovative and enthusiastic GP who played a central role in advanced access

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[4] Initials of Sistema Único de Saúde, the Brazilian National Health System

implementation. Roberto was a passionate innovator, widely acknowledged by managers and peers as a committed professional and skilled doctor and mentioned by many participants as a prototype opinion leader. For most of the time covered in this study, he was a practitioner in the Summerville clinic, one of the first clinics to implement advanced access and from where many opinion leaders emerged.

> *So, the public service has a lot of that continuum and that inertia in which you are doing what you have to do, but without engaging much. And when you know that you are part of a mobilisation ... this I see a lot in Roberto, he thrills, and shows it, when one thing works, when a thing is new, "Wow, really cool, we're making a difference." (Dora, doctor, programme designer)*

I followed Roberto's trajectory since his arrival in the organisation. He differentiated from most colleagues in terms of commitment to work, willingness to take risks, and wish to see things change.

> *There's no financial incentive to do that. I can do nothing and still earn the same thing ... So, what really influences me is this enthusiasm for making a transformation. (Roberto, doctor, opinion leader).*

Roberto participated in both local innovation and organisation-wide initiatives while keeping a consistent dedication to local clinical practice. He seemed to find motivation and a sense of purpose in his social role as health worker.

> *First, I did the experiment on my team… I changed the access. What made me seek that experience? Willingness to improve work processes, understanding of my purpose here. And a search for that recognition too… I see that whoever is not influenced by these projects, experiments, has moved away from the purpose of work. What does work represent in their life? They lost that purpose. And I think that to be influential, we have to rescue this purpose in some way. You're a health professional. When management comes and offers these experiments, behind these projects, what are we talking about? First, about your social role as a health professional. (Roberto, doctor, opinion leader)*

At the same time, he was a critic of the institutional limitations, like structural and staffing issues, and was reluctant about management positions. Even though, he ultimately accepted a job as a project manager, probably motivated by the opportunity to do more than he was doing as a practitioner and, in this way, satisfy his wish to be a relevant agent of change. This was the analysis of Marcos, a doctor and senior primary care manager about Roberto´s trajectory. Marcos had once been an advanced access opinion leader himself and became Roberto´s line manager when he accepted a project management position.

> *So, Roberto was a carved leadership that moved from a position of complainant radicalism to one of pragmatic construction, what by the way he assumed very well. He was shown a way out of the 'everything*

is wrong' speech and into a 'look what we can do'. (Marcos, doctor, programme designer)

The profile and trajectory of enthusiastic opinion leaders like Roberto also seemed to jeopardise their credibility and influence. Innovative opinion leaders may be seen as too distinct of their colleagues to be taken as feasible models. Their enthusiastic support to innovations can raise doubts about their objective judgement. And the continuous engagement in implementation can associate them with management to the extent they are seen by other practitioners as stepping out of the group. Authors who reflected upon the opinion leader concept highlighted the paradoxical combination of public individuation and social conformity that defines opinion leaders: they should lead in the adoption of innovations but also conform to the group and system norms (Weimann, 1994; Rogers, 2003).

Roberto told me back in the informal consultation that he was aware that the new management position would eventually wear out the identification and the bond he initially had with his peers. So, although excited about the new job role, he was also aware of the risk of losing his credibility, which was based on being a practitioner who acted upon his beliefs.

In summary, some opinion leaders with a profile of innovativeness, enthusiasm in work, and a wish of being responsible for change were intrinsically motivated by innovations. However, the same differentiated profile that facilitated their involvement with innovative and collaborative behaviours risked their credibility among colleagues and their ability to build trust in innovations and model new practices, potentially reducing their influence over colleagues.

5.2.2 Ordinary opinion leaders

The recognition of "ordinary" practitioners as opinion leaders contributed to the emergence of a distinct layer of influence which broadened the scope of the programme beyond the first innovative opinion leaders. Ordinary practitioners were the average professionals, not especially innovative, not previously involved in change.

> *… he was identified as someone who was not in the middle of the residency [training program], those groups, but someone who had potential, someone who could be stimulated, who could improve, who had a latent interest. (Bento, doctor, opinion leader)*

They were particularly motivated because they did not expect the institution to recognise their achievements. They felt appreciated and relevant, what

counteracted feelings of inertia and pessimism and encouraged them to improve practice and support local change.

> *I think that the fact that he was invited had this impact on self-esteem, "Okay, someone saw that I'm here, someone saw that I could do it". I think even a stimulus to study more. (Bento, doctor, opinion leader)*

Ordinary opinion leaders contributed to increasing the reach of the programme by influencing their local teams, thus working in small spheres of influence; and by providing feasible models to other practitioners.

> *Yes, and in a way, I think it would help the very person who is used as an example to think, "I did not reach the Summerville clinic [standard], I got in the way, but I'm already an example, I'm on the right track, I'm being recognized". I think it also encourages this person to go further. (Murilo, doctor, opinion leader)*

The use of ordinary leaders could also circumvent potential issues related to perceived differences of authority or power between opinion leaders and target individuals, in turn facilitating identification and empathy.

> *… maybe even identify people who were not so related to that process, to other processes, other activities as we said, maybe people more marginal ... because these people, maybe their speech have more reach. I think the smaller the gulf between who is dictating and who is going to have to follow the rules, the greater the chance of success. (Bento, doctor, opinion leader)*

Based on this same idea of empathy and identification as an antecedent of influence, Luiz suggested that recruiting a more diverse range of opinion leaders could improve the chances of reaching distinct types of practitioners. Luiz was a nurse manager and leader of the nursing committee, and he was also one of the few nurses to be identified by participants as an advanced access opinion leader. He therefore had a broad perspective of the programme.

> *If I know that some people have some resistance to me, maybe I would use other people towards whom they have no resistance, or even sympathize. I think mixing the different helps, instead of always closing in groups of similar ... like a broad-spectrum antibiotic. (Luiz, nurse, programme designer)*

One such example was the strategy used by the nursing committee leaders to overcome the opponent role of senior nurses to the nursing protocols. Such senior nurses were also respected opinion leaders, respected for their acknowledged experience and contribution to the professional group. The programme designers perceived that the influence of the formalised opinion leaders (nursing committee members) was limited to overcome the local influence of those natural leaders. They identified local collaborators in each clinic, drawing on their personal networks, and informally recruited them to adopt the protocols

and persuade their colleagues. This story will be resumed in chapter 6 when discussing the role of accessibility and personal relationships as mediators of opinion leadership.

In summary, the recognition of ordinary opinion leaders expanded the reach of the programme beyond the sphere of influence of the first innovative opinion leaders. The recognised practitioners felt motivated by the unexpected recognition and provided feasible models to colleagues that were less prone to identify with the more innovative opinion leaders.

5.2.3 Perception of organisational support

One contextual factor related to the inner setting, which interacted with the motivation and interest of opinion leaders in innovations was the perception of organisational support. Some participants reported that apparently motivated opinion leaders were discouraged by the perception that a given innovation project was not adequately supported. This discouragement took the form of reluctant engagement, little effort spent in persuasive behaviours, and limited influence over the peers. Previous studies have attributed the failure to involve opinion leaders to their perception of insufficient organisational support or poor project management (Dopson et al., 2001; Locock et al., 2001). Opinion leaders may be reluctant to embark on a 'sinking ship' which would risk their professional image and status.

One example of failure to engage opinion leaders was an early attempt to recruit regional leaders to an initiative of regional regulation of access to specialist care. This innovation consisted of GPs monitoring and providing feedback to their peers about referrals to specialists. From what I followed as a manager at that time, when the first opinion leaders were invited the project was still too incipient. The middle managers in charge had a poor understanding of the innovation, and the roles of the opinion leaders were not completely clear.

> *I see the affinity with that idea which is to be implemented as a crucial point. Whenever we had as an implementer someone who had not bought into that idea very well, it didn't work well. See the example of Douglas and Robson with the district regulation. They are both proactive and positive people who did not take off. They were clear leaders who were called to the spotlight and ended up hiding. To one of them, Douglas, my vision is that two things happened. At the personal level, either his ambition was not in that direction, or he had already reached his aim somehow. And at the organisational level, the*

strategy which he was called to participate seems not to have motivated him much. (Marcos, doctor, programme designer)

In general, the reluctance to assume an opinion leader role was not a problem with the programme designers or the organisation but rather a negative perception about a specific innovation. Sometimes opinion leaders who did not 'take off' in one project were successfully engaged in others.

I saw several people oscillating, coming in, participating in some spaces, and going out, and not accepting, anyway, not coming together … What I realised was that they did not fit where they were, or they did not feel comfortable with that kind of production. But in other productions, they managed to participate actively. (Ivan, doctor, opinion leader)

What these examples illustrate is the importance of matching the identification of opinion leaders interested in the innovations and highly motivated, to adequate organisational support and resources, including the integration of the opinion leader role in the organisation (McCormack et al., 2013). The influential role should be seen as safe and advantageous, even by highly innovative and enthusiastic leaders. The theoretical literature on motivation supports this view by positing intrinsic motivation as an inherent propensity of individuals, that is reinforced by some activities and not others and might be diminished by the perception of external threats or controllers of the behaviour (Robson and Deci, 2000).

There's a lot of that: are we calling the right person to the right strategy? (Marcos, doctor, programme designer)

5.3 Ownership of innovations

The assignment of responsibilities to opinion leaders in the implementation of advanced access and nursing protocols seem to have contributed to a sense of affiliation or self-association with those innovations. Self-association reflected on interest and responsibility for the trajectory of the innovations. Participants reported that professionals who participated in workgroups to produce advanced access guidelines, for example, became advocates of the group products, which they saw as a result of their work.

There were several different positions within the network, and suddenly you built a coalition around that co-construction because it was the product of each other's commitment. By the time that product went to the street, it had ceased to be a product of their dedication and became a kind of intellectual property of each of them, and it was defended with tooth and nail. (Marcos, doctor, programme designer)

The sense of affiliation, interest and responsibility for an object or idea – for example, innovations or projects within an organisation - has been defined as ownership. The idea of ownership (although not named as such) was one of the few mechanisms that I identified from documents. It was implicit in the assumption that assigning responsibilities to practitioners in implementation, e.g. adapting access guidelines or writing protocols would increase their commitment to those innovations and broader organisational improvement (Zepeda et al., 2013a; Zepeda et al., 2013b; Siqueira, 2014).

Participation, identity and ownership

In ownership, the responsibility for the innovation is a result of the association between the self and the owned innovation, with which comes a desire to preserve or reinforce that identity. The relationship with owned innovation*s* contributes to satisfying underlying psychological needs, like causing a change in the environment, maintaining self-identity, and having a place to belong in (Pierce et al., 2011). As one participant said, the innovation becomes part of the identity of the opinion leaders; by contributing to implementation, they are developing and reinforcing their identity.

> *And you attach that person's leadership image to that strategy, that strategy becomes that leader's personal strategy… There is a symbiotic relationship between strategy and leadership. (Marcos, doctor, programme designer)*

Concerning the form of the opinion leader's contribution to implementation, participating in the production of innovations, e.g., adapting guidelines or protocols were more clearly associated with ownership. Apparently, feeling oneself as an author of the innovation was associated with a sense of control, responsibility, and accountability for the innovations. Ownership seemed to lead to the buy-in of specific innovations, differently from the broader collaborative behaviours generated by the satisfaction mechanism earlier described.

> *Any participatory process in which you build an instrument together with people, and make decisions with them, facilitates implementation. For example, when I was in regional management, we started developing a handbook for practice managers. The guide was prepared by the practice managers led by Diana. In her clinic the handbook had a much higher meaning than where there was less involvement. (Ivan, doctor, opinion leader)*

In the initial theory, I related ownership to authorship, e.g., the direct contribution of opinion leaders to drafting documents. This is consistent with literature on the uptake of guidelines which has highlighted the importance of enabling the participation of clinicians in production and adaptation to achieving local

ownership (Brennan et al., 2017). However, during data analysis, I noticed that more superficial participation in implementation, e.g., attendance to meetings in which documents were presented, was also related to ownership and buy-in. Peripherical participation seemed to motivate target individuals to accept and uptake innovations. This was exemplified by Vicente when referring to regional meetings in which the nursing protocols were presented to frontline nurses for validation. Vicente was a nursing protocol opinion leader with a good perspective of implementation: he contributed to development of the protocols as a committee member, to implementation as a middle manager, and used the protocols in his part time clinical work.

> *What really helped was people feeling part of the project ... each new volume of the protocols went through this validation in training meetings, before being launched the document was validated with the whole network. At those meetings, a colleague would talk about using a medicine in another way, we would ask about the evidence for that, and this colleague who was not present in the drafting of the document would feel contemplated because he was participating in a public consultation before the document was completed. (Vicente, nurse, opinion leader)*

Conversely, participants observed that implementation was more troubled in teams where no opinion leaders were identified, or where local practitioners did not participate in any form of discussion before actual implementation. The routine practice of validating the nursing protocols in regional meetings of nurses before publication mostly safeguarded that innovation from this perception. It was different with advanced access, which was launched in big events in which only part of the teams could participate (otherwise the clinics would need to close down). Implementation of advanced access was also more protracted, and over the years, many clinics saw all the staff that had participated in producing or validating the innovation changed. Therefore, that innovation was sometimes received as a top-down initiative. Reactions to advanced access, as reported to participants, were more frequently of indifference, inertia, passive resistance, or resentment and feelings of exclusion. Perception of the innovation as an intrusion or imposition reinforced other previous restraints already associated with advanced access, which was seen as complex and risky.

In clinics with opinion leaders in the local team, their participation in the change process softened such perceptions. They provided entry and legitimation to innovations (Valente and Davis, 1999) which otherwise would have been rejected by the local team.

> *So why Summerville changed, and Clearview did not? Because people participated less or felt less participant in Clearview. Advanced access was presented to them as a proposal, but they did not feel part*

of its elaboration. The Summerville clinic, from the beginning, had professionals involved in the production of … everything. (Ivan, doctor, opinion leader)

5.3.1 Collective ownership

The connection between ownership and identity was also observed in the group level, leading to the engagement of clinical teams or professional groups with innovations. One example was the collective ownership of advanced access in the Magnolia clinic. This clinic was an unlikely scenario for innovation due to understaffing and an excess of patients from a deprived area of the city. Even though they were one of the pioneer clinics to implement advanced access, what led the district management to recruit the practice manager as an opinion leader. The involvement of the practice manager in implementation reflected in more engagement of the local team, which felt indirectly participating in the change process. This story will be detailed later on in this chapter.

When Estela calls the then Magnolia coordinator Alex to talk about access to other clinics, at the same time that he was preaching the good news of access, he was also committing his clinic with a more open attitude about access, taking that back to the clinic. (Marcos, doctor, programme designer)

Another example of collective ownership took place in response to a temporary prohibition of the nursing protocols. Medical associations in Brazil have long attempted to restrict other professionals from performing what they deem as exclusive medical acts, like prescribing and ordering tests. The nursing protocols explore a legal loophole which allows nurses to perform such acts, but the judicial dispute persists, and from times to times a new deadlock is created (Brandão, 2010; Nascimento et al., 2018). In 2017, a federal injunction ruled all nursing protocols as illegal, suspending their use by the nurses. What resulted was a climate of rebellion among the nurses in Florianópolis, as in other cities were protocols were implemented.

Many participants mentioned this episode, describing that the nurses saw the protocols as collective property, as something that was being taken from them. Street protests and media insertions ultimately resulted in the issuing of directives from the nursing council and the municipal health secretary protecting their right to continue using the protocols while the judicial contention was resolved.

I'll give you an example. A federal court injunction was issued preventing us nurses from requesting exams. It was incredible the mobilisation of us nurses here, in the city and state levels. But in Florianópolis, you realised that people were sad because they could not do anymore what they were already doing. They were sad about

> *it, really down, they said, "They took away my right to work". Some time ago people would say, "Well, that's good, I do not have to do it anymore. It's one less thing." (Vicente, nurse, opinion leader)*

As observed with advanced access in the Magnolia clinic, and with the nursing protocols at the municipal level, the sense of ownership which resulted from participation in implementation could work as a safeguard for innovations, providing sustainability across political turmoil.

> *This issue of co-production is fundamental because you mobilise people to build together, and at the same time, you build a control mechanism. Because if it was built together, you have a smaller chance of deconstructing that, for example in a big change of policy or strategy. (Dora, doctor, programme designer)*

The differences in the level of the system (Ferlie and Shortell, 2001) that was primarily affected by collective ownership of advanced access and nursing protocols can be explained by the nature of each innovation. The nursing protocols are instruments for individual clinical practice, do not requiring great changes in the teamwork. But they also represent an upgrade in the nurses' role and autonomy, hence reinforcing the identity of the professional group. Advanced access, on the other hand, requires changes in roles and routines of the whole team (doctors, nurses, reception staff), and is generally seen as difficult to implement. Therefore, in that case, successful implementation was a team achievement, reinforced collective identity at that level.

In summary, assigning tasks to opinion leaders in the production and adaptation of innovations contributed to ownership, buy-in and support to innovations. Ownership is accompanied by an association of the innovation with one's self-image, a sense of control and responsibility for the results of innovation, and a wish to see it succeed and spread. The perception of indirect participation in change through the opinion leaders extended ownership and buy-in to the opinion leaders' colleagues, in particular when the innovations required collective action.

In the next section, I explain how the position and role of the opinion leader in the organisation affected ownership of innovations. I will also describe how the local alliance between opinion leader, practitioners and managers contributes to implementation, drawing on the story of the Magnolia clinic.

5.3.2 Formal roles and management positions

One recurrent theme in the interviews was the complex relationship between opinion leaders and organisational leaders. Many participants talked indistinctly about managers and opinion leaders; described managerial strategies as

examples of social influence or talked about the how opinion leaders contributed to management. The association between opinion leaders and management was a crossing theme that emerged from data analysis. For example, opinion leaders who were assigned formal roles or moved to management positions could be more motivated to work for innovations (theory 1), but also bring power and authority issues to their relationship with peers, potentially affecting trust and identification (theory 2). Furthermore, being in management, they would be less able to influence by example (theory 3).

Two connected aspects of this theme worked as contextual factors in programme theory 1: the integration of the opinion leader role, or whether they were informal and emergent or formally designated; and the position in the organisational structure, e.g., practitioner, manager, or both. The profile of the opinion leaders of advanced access and nursing protocols in relation to these and other categories were described in chapter 3.

Formal opinion leader roles ranged from temporary assignments, e.g., coordination of a task-oriented workgroup; nomination to established groups, like the nursing committee; to full-time management positions. In distinct degrees, these assignments were perceived as institutional recognition and implied career progress, thus improving self-esteem, professional pride, and satisfaction in work.

> *When I participated in management, this brought a personal status. The fact that you are in management brings a personal status; people seem to value you more … Sometimes it is addictive to have a place that gives you a little more power, status. It seems that you are in some ways more beloved, or at least that people recognise you more, they know your name, they know who you are. (Ivan, doctor, opinion leader)*

The additional accountability that usually accompanied formal roles implied more control and responsibility for the innovations, which in turn reinforced ownership. The opportunity for influencing the innovation's trajectory was one possible reason why Roberto accepted a management position after years of reluctance.

> *You take Roberto, for example, he was convinced to take on this role when it was shown to him that the better world that he wanted could only be built with clear leadership to direct it. (Marcos, doctor, programme designer)*

In Marcos's view, Roberto was persuaded that he was essential for the success of a project in which he believed.

Career progression

Management positions also worked to convert practitioners reluctant about innovations into enthusiastic innovations promoters. The new responsibilities and role expectations associated with the new position contributed to changing their stance; supporting innovations was an expected component of the new role and a way of receiving approval and entry into a new group of reference.

> *Another point, in the case of the middle manager, is the change of role within the institution. When you are a practitioner, you are the manager of your micro-process, your micro-space, and at the most, you dialogue with your teammates about the patients. From the moment you become manager of a district with several clinics, and you understand that for the clinics to work better, they need to adopt that process, even if you do not agree so much, your inductor role ends up changing. (Luiz, nurse, programme designer)*

Career progression of individual opinion leaders, usually represented by management positions, can be seen as both a context for programme theory 1 and intermediate outcome from the point of view of the opinion leaders. Prospects of career progression motivated opinion leaders to accept formal roles in implementation, what in turn improved their chances of being invited to new positions.

The career progression of opinion leaders can also be seen as an organisational-level outcome, as suggested by some participants. The constitution of a group of managers with a clinical background, local experience, and credibility within practitioners was reported to have facilitated collaboration between managers and practitioners and reinforced the local capacity to implement innovations.

On the other side, practitioners who became managers sooner or later had their status as peer opinion leaders challenged by the new institutional role. They had now personal investments in the innovation, which raised doubts about their objectivity and critical judgement. A range of duties not related to the innovations limited their involvement in the innovation projects; limited resources led to the frustration of initial expectations; and conflicting views between managers and practitioners subjected them to contradictory pressures and difficult choices between affiliation groups. The differences in power and authority also stressed their relationships with colleagues, constrained the development of trust and identification, which were determinants of their social influence. Even though, most opinion leaders who moved to management fitted the new role over time and continued in the management level, usually still supporting innovation through roles like regulation, training, or monitoring.

5.3.3 The local alliance between managers, opinion leaders and clinical team

A related but distinct situation involving opinion leader and manager roles was the recruitment of managers as opinion leaders, usually practice managers. The typical situation reported by participants was the support of practice managers (opinion leaders) to middle managers (programme designers) in regional implementation. Practice managers recruited as opinion leaders would assume tasks beyond their local duties, like discussing their experience in regional meetings and supporting colleagues of other clinics. Practice managers were members of clinical teams with administrative responsibilities, a dual position that implied they had local authority and differentiated access to information and resources, and also the recognition of colleagues as a local team member. The structure of management in the study setting was described in chapter 3.

5.3.3.1 Alex's story and the Magnolia clinic

Involving practice managers in innovations was reported to generate a powerful alliance between management, opinion leader and clinical teams. An example of this local alliance was the story of Alex, practice manager of the Magnolia clinic and advanced access opinion leader. This was one of the first instances of the opinion leader strategy. The story was first mentioned to illustrate the related topic of collective ownership.

The Magnolia clinic had an excess of demand, a deprived population, high influx of patients from neighbour areas, but still was one of the first to implement advanced access. Any innovation in such a hard context was an achievement, so the clinic was a powerful example to other clinics of the feasibility of improving access (more in chapter 7).

> The Magnolia had an access system that today, looking at Florianópolis; it was extremely conservative. But in a certain way, [our clinic] was chosen because it survived the pressure of demand with some grace. (Marcos, doctor, programme designer)

Alex was a senior professional respected among managers and practitioners. He was recruited by programme designers (in this case, middle managers) to discuss the Magnolia experience with other clinics of the same district. His choice was based on popularity and charisma, which the programme designers expected to draw upon to persuade other teams; and the successful experience of the clinic

with advanced access, which would hopefully show the feasibility of the innovation.

> *The discussions at that time led Alex to discuss even more significant access changes in the clinic further … At that time, it became clear to me that the Magnolia, a clinic traditionally related to difficulty, to troubled work processes, was opening up more and more. (Marcos, doctor, programme designer)*

At the time of this recruitment as an opinion leader, Alex was not an enthusiast of or expert in advanced access. He was close to retirement. The opinion leader role brought some freshness, and a positive image of commitment and leadership, to the end of his career. Through leading and disseminating the Magnolia's experience, he fulfilled the opinion leader role.

> *Taking him at that moment was a self-fulfilling prophecy because he was chosen - perhaps he is atypical - far more because of leadership and inspiration than proficiency in the subject. He created the subject proficiency while he was working over the theme … And until his retirement, he became a preacher of this specific theme, with greater and lesser degrees of success. (Marcos, doctor, programme designer)*

Because of the practice manager position, Alex could more easily claim the results of the Magnolia clinic as his work. He perceived the recognition of the clinic as recognition of his leadership, which reinforced his commitment to the opinion leader role.

> *Alex began to interpret the attitude of opening [the clinic's access system] as a validation of his management. The clinic was opening the access because he was validating the changes that were made by the team. (Marcos, doctor, programme designer)*

Practice managers like Alex combine a professional background with administrative responsibilities and should learn to navigate the troubled border between the clinical and managerial worlds, with different and conflicting demands (Spehar et al., 2015). They often need to learn management on the fly, and rely on the support of the local team and other managers to succeed in the position (Fitzgerald, 1994; Spehar et al., 2012). The support that Alex received from the clinic's team and middle managers for his involvement in the opinion leader role brought him political stability and leverage, reportedly helping him to navigate a troubled territory.

> *Alex had the wit to understand that in that internal political situation that he had - the clinic was a time bomb … If he validated his team, became the team's spokesman for that strategy, it would make his team feel represented, seen. And in a way, it would validate him too. I was his line manager afterwards, and that validation he acquired in the process of improving access became an anchor for him. (Marcos, doctor, programme designer)*

The Magnolia's team benefited from Alex's stability and leverage, for example in the form of priority in the allocation of scarce resources, or protection from political interference in the clinical work, which was common in the region. This motivated the local team to innovate and collaborate with managers, providing a powerful example for the implementation of advanced access in the district.

> The practice manager who is smart enough to understand that 'betting on the winning horse' will give him legitimacy … It is a strategy that offers excellent results in short to medium term. That's what happened there. He had the political sagacity to see that … the strategy was good, would bring benefits to the clinic … And that to be [leader] of that strategy would bring dividends to him and his team. … He was a good autocrat, an 'enlightened despot', who managed to turn that recognition as a local manager into positive recognition of his team. So, the team was able to interpret that if Alex had a positive image on the organisation, the team would also have. … It was a symbiotic process. (Marcos, doctor, programme designer)

It was a win-win situation. First, the practice managers could use the control over local processes and resources as a strategic advantage to promote innovations, for example, by setting the agenda of the team or supporting local pilots. Control and responsibility, as seen earlier about ownership, would reinforce their buy-in to innovations. Engaged practice managers supported the implementation efforts of programme designers. Second, the local team felt indirectly recognised through the recognition of the practice manager, which was seen as a spokesperson of their collective achievement. Recognition, as earlier said, contributed to the motivation of the local team, local innovation and collaboration with managers. They also supported the practice manager in the opinion leader role as a means of sustaining the initial recognition. Third, practice managers had potential benefits from collaborating with senior managers, in the form of paybacks like stability in the position or leverage in negotiations for resources. These benefits and the elevated status from the recognition could motivate them to sustain innovations continually.

Alex was an advanced access opinion leader within the district until his retirement, and the Magnolia clinic consolidated an image of resilience and innovativeness that went beyond the organisation: a 2018 national TV show mentioned the clinic as an example of how engaged professionals make the difference in primary care.

The mutually beneficial alliance between opinion leader, local team and management reflects an important, although not easily found, aspect of successful innovation projects, which is the fit between innovation, opinion leader and the local system (McCormack et al., 2013). When there is no such fit, the

benefits of supporting changes in terms of status or position are not clear, and the opinion leader may be reluctant to get involved.

Failure in creating this kind of local alliance may be related to a number of factors, but the perception of advantages in the innovation and the influential role seems to be an important end process. That could explain a failed attempt to engage another practice manager, in another district, as an advanced access opinion leader. Lack of support from the local team, and risk of disturbing a comfortable political position – quite distinct from the delicate situation of Alex as local manager of the 'time-bomb' Magnolia clinic – worked against the programme designers this time.

> *He was quite comfortable in that role, and in fact, the change was going to bring about a huge mobilisation for him in terms of work, in terms of getting out of his comfort, of that status quo. … He was in the coordination of a clinic that had access barriers, but that, on the other hand, did not have demand pressure, so the community was a little accustomed to that functioning. To mess with that would mobilise a lot of energy from the person who was there coordinating all the processes. So besides [the change] not having a resonance in the team, a conducive field for that change, he also did not want that change, because that would indeed bring more movement for the clinic, more work, a mobilisation of energy that he might not wish for him at that moment of life. (Dora, doctor, programme designer)*

In summary, assigning formal roles to the opinion leaders brought an enhanced sense of control and responsibility for related innovations, which reinforced ownership. Inviting opinion leaders to management positions, in particular, opened perspectives of career advancement, which improved their satisfaction, institutional identification, and ownership of innovations. Management positions also carried new responsibilities and conflicting priorities which risked the motivation and credibility of the opinion leaders. Differently, when credible practice managers were recruited as opinion leaders, their leading position facilitated claiming the innovations as products of their work, reinforcing ownership; the indirect recognition of the local team extended the sense of ownership and generated innovative and collaborative behaviours; and the engaged opinion leader and sustained local innovation were useful resources for implementation, providing persuasive power and practical examples.

5.4 Summary of findings and refined theory

The causal processes around the two mechanisms of the initial theory - improved self-esteem and social status, and ownership of innovations – were disentangled in the refined theory. The mechanisms and outcomes were detailed but not

changed in its nature. In the initial theory, I considered self-esteem, pride and social status as drivers of the opinion leaders' motivation to promote innovations. Through the findings shown here, work satisfaction more clearly emerged as the critical mechanism. Improved self-esteem and social status were still important insofar as they contributed to improving satisfaction. This mechanism is a response to institutional recognition and generates proactive and collaborative behaviours which may include innovating and supporting change. This outcome was developed with the support of the concept of organisational citizenship behaviour, which includes innovative behaviour.

The second mechanism, ownership of innovations, was conceptually refined with support of literature on ownership in organisations. Ownership is expressed in expected rights and responsibilities, and a sense of social identity associated with the innovations; it is a response to the involvement in production or dissemination of innovations and generates buy-in and support to innovations. When innovations are perceived as the collective responsibility and achievement of a local team or professional group, ownership and buy-in extend beyond the opinion leaders to the target individuals. Collective ownership was an emergent concept, not present in the initial theory.

The two refined mechanisms seem to reinforce each other: satisfaction coming from institutional recognition motivates additional commitment of energy and personal investment in innovation, which reinforces ownership; perceiving oneself as responsible for change and improvement in the work environment reinforces work satisfaction and motivation to continue innovating.

The context factors triggering the two mechanisms were largely redefined. Concerning the satisfaction mechanism, innovative practitioners were more easily identified and recruited as opinion leaders and more prone to take risks and be protagonists of change. However, their involvement was still contingent on a perception that sufficient organisational support was available. The involvement of ordinary practitioners as opinion leaders increased the reach of the programme by showing that innovation and recognition were possible goals and by facilitating identification of average practitioners with opinion leaders. On the other hand, those involved with innovation but not recognised felt resentful and in some cases became opponent opinion leaders.

About the context triggering ownership, opinion leaders who were assigned formal roles in implementation, including management positions, had the sense of responsibility associated with ownership reinforced. Practice managers were especially prone to develop ownership for innovations because they were in a propitious position to claim the innovations as a product of their work and grant

political benefits from the collaboration with managers. The alliance between opinion leaders, management and the local team is a context factor that drew upon the ideas of organisational support and innovation fit to the local system, both present in the initial theory. It can be seen as a win-win situation for the involved.

Differences between the innovations

As for the initial theories, there were differences on which aspects of the refined theories were more relevant to explain the engagement of opinion leaders. First, although opinion leaders in general expressed interest in innovations and a distinct commitment to improve practice, advanced access leaders were more proactive, innovative and entrepreneurs and had a higher chance of becoming managers. Being an advanced access leader required more motivation and personal investment to understand a complex innovation and coordinate the clinical team to overcome local barriers to change. Adopting advanced access also was riskier in terms of status because of the resistance to that innovation among average practitioners. At the same time advanced access leaders were well recognised by managers what included opportunities to move to a management career. The topics of perceived risk and resistance to innovations will be analysed as aspects of programme theory 3 in chapter 7.

The second difference related to how the mechanism of collective ownership played out for each innovation. If advanced access leaders were entrepreneur and innovative, they were also outsiders. While in a few teams there were particular circumstances which facilitated collective engagement with advanced access - examples are the Magnolia (section 5.3.3.1) and Summerville (section 5.2.1.1) clinics -, for the average practitioner it had more risks than advantages. In contrast, the nursing protocols leaders were technical and corporative leaders that represented their colleagues, and the protocols were generally seen as an achievement of the professional group. A sense of collective ownership motivated the support from opinion leaders and target individuals to the protocols, as illustrated in the episode of the street protests against temporary prohibition of the protocols (section 5.3.1). This sense of collective will be analysed from a different angle in chapter 6 when discussing the mechanism of social identity.

5.4.1 Refined theory

Based on the findings shown in this chapter, I developed two refined theories, respectively based on the mechanisms of satisfaction and ownership. I preserved

the basic structure of the initial theory whenever possible to facilitate comparison and detailed the causal processes. I also added nested CMO configurations, meaning that they are related to and dependent on the previous causal explanation, to represent mechanisms operating within contexts (Westhorp, 2018).

The refined theories are shown below.

Refined theory 1.1 - Satisfaction and motivation

Recognising the experience of opinion leaders with innovations improves their satisfaction in work, based on a sense of appreciation and relevance, and reinforces their motivation to get involved in local change. Satisfaction and motivation will lead to proactive and collaborative behaviours, including support to innovation and change. The opinion leaders will support innovations if they are interested in the innovation topic; if they find a sense of purpose in their work and want to distinguish themselves from the others, which will make their involvement with innovations intrinsically pleasant; and if there is organisational support to the innovations and to their roles. The support of opinion leaders to innovations will contribute to a climate conducive to change and facilitate acceptability and adoption among practitioners.

Recognising ordinary practitioners may counterbalance feelings of invisibility and pessimism and motivates them to be more involved with work and to innovate, increasing the reach of the programme and the climate for change. Conversely, failing to recognise innovative practitioners, frustrates their expectations and causes resentment, producing opponent opinion leaders.

Refined theory 1.2 - Ownership

Assigning responsibilities to opinion leaders in the implementation of innovations promotes ownership of the innovations, which is expressed by a sense of affiliation with, control of, and responsibility for the innovations. Ownership will promote buy-in and support of opinion leaders to innovations. Buy-in will result if the opinion leaders are involved in production or adaptation of the innovations, which provide a sense of authorship; if they are assigned formal roles or management positions, which improve their status and responsibility; and if they are in leadership positions in the organisation, which facilitates claiming the innovations as product of their work.

Recognising practice managers as opinion leaders extends ownership and motivation to their teams through a sense of collective recognition, achievement

and responsibility. Collective ownership will facilitate a local alliance between managers, opinion leaders and clinical teams, contributing to the sustainability of innovation and change.

Recruiting opinion leaders to management improves their motivation in work through prospects of career advancement and improves the institutional capacity for implementation through better collaboration between managers and opinion leaders. However, management positions impose competing demands to the opinion leaders and risk their status as peer group members, potentially reducing their credibility and jeopardizing social influence.

Chapter 6 Building trust in innovations

6.1 Introduction

This chapter presents findings related to Programme Theory 2. I will explain how involving opinion leaders in implementation improves the credibility and acceptability of innovations. The contribution of opinion leaders to producing or disseminating innovations can change both attitudes and overt behaviour of colleagues about innovations, although distinct mechanisms are probably involved in each outcome (Lomas, 1993; Pathman et al., 1996). In this chapter, I will primarily focus on how the opinion leaders promoted acceptance and intention to adopt innovations. Chapter 7 will address mechanisms more clearly linked to behaviour change.

The initial theory shown in chapter 4 is repeated below.

Initial theory 2 - Bringing credibility to innovations

The participation of opinion leaders in implementation of innovations contributes to building better understanding and trust and changing subjective norms about those innovations within their social groups. Clarification, trust and new group norms will reduce resistance, improve acceptability, and promote more intention to adopt innovations. Acceptability and intention to adopt will result if there is a climate of uncertainty stressing the need for information and advice; if the practitioners perceive the opinion leaders as similar, consistent and accessible, and have informal relationships with them, what makes them trustworthy. Trust in the opinion leaders and attribution of positive features will also facilitate the imitation of their behaviour concerning innovations.

Guided by the initial theory, I identified theory elements and causal processes from data analysis. Then I compared the findings with the initial theory and modified it accordingly to generate the refined theory. The interpretations in this chapter have a greater focus on identifying causal processes than theory elements when compared with the chapter on the initial theories, reflecting a deeper understanding of the programme.

The mechanisms are presented alongside context factors to which they are contingent, consistently with the realist logic of generative causation. First, I examine how the support of credible opinion leaders builds trust in innovations, reducing restraints and improving acceptance within their groups. Then, I explain how opinion leaders associate the innovations they support with the social identity

of their groups, changing group norms in its favour and promoting interest and intention to adopt. Key aspects of the context are detailed in subsections. At the end of each section, small summaries show the causal processes that fed into the refined theory. Last, a summary of the findings and the refined theories come at the end of the chapter.

6.2 Credibility and interpersonal trust

Participants mentioned instances in which the opinion leaders seem to have used their personal credibility to persuade colleagues to look positively to innovations. Their endorsement was the main persuasive element, rather than perception of the value or advantages of the innovations. They endorsed innovations by participating in production or adaptation, adopting in their individual practice, or simply talking about it in formal and informal networks. Their contribution raised interest, highlighted advantages, and improved acceptability of innovations.

> *People were more committed to that proposal because they knew that it came from a collective construction and that it had our involvement. And because of our acceptance in our workplace, this influenced the implementation of the innovation locally. (Ivan, doctor, opinion leader)*

One example of how the credibility of opinion leaders helped to reduce uncertainty associated with changes was reported by Estela. A new referrals system implemented overnight was causing a lot of distress among practice managers, and a meeting was called to discuss how they would do with the pressure to adopt it. In this case, it was Estela who played the role of opinion leader, drawing on long-term relationships with the practice managers who also happened to be nurses. As a senior manager, she had access to privileged information; as a member of the nursing community, she was trusted to be objective about the innovation and to act for the good of the group.

> *He wanted me to give him the certainty that it was not another persecution from management. And I said, "I know the girl who's doing it, I understand why it's being done, be calm", and my speech reassured him ... there's something about what you built, people know your opinion, you express your opinion. (Estela, nurse, programme designer)*

Previous literature supports the role of opinion leaders in adapting innovations to fit their groups; they seem to be able to translate the innovations into locally acceptable and explicit knowledge that could then be used by their colleagues (David Johnson, 2012).

> *The nursing protocols were made by nurses from the services, and so was the training, always with examples from the day-to-day reality of*

the clinics, sometimes even ordinary things, everyday things … to really make sense for people to use that protocol. (Clara, nurse, opinion leader)

Trust in the opinion leaders and perception that they were members of the same group implied an expectation that they would judge and improve the fit of innovations to the group's needs and values.

Reducing initial resistance

Before the programme, innovations were usually seen as top-down initiatives imposed on overwhelmed workers (Zepeda et al., 2013b). The programme designers expected that the involvement of opinion leaders could contribute to changing this impression. They should act as more credible messengers for the innovations than the managers, which had their image associated with chronic structural problems and a vertical management style (chapter 3).

> *This was the first experience where I had to use key people to spread an idea… In our heads, we thought, "Well, it cannot be us talking, it has to be someone they recognise, in their mouths it will sound cool", that was my main idea. (Estela, nurse, programme designer)*

The role of those credible messengers was to disarm initial resistance to change which was associated with institutional problems, setting the stage for subsequent implementation efforts. At least that was Estela's goal with the doctors' peer meetings.

> *[I expected] that the others began to change… that they began to do, or at least try, or at least change the conception that it was possible. Because I had a degree of resistance and barriers so absurd. (Estela, nurse, programme designer)*

In the theory development, I have hypothesised that opinion leaders would be able to influence their colleagues based on perceived similarity. Peer opinion leaders have been shown to influence healthcare colleagues based on a sense of trust which arises from the perception that they 'walk in the same shoes' (Borbas et al., 2000; Locock et al., 2001). As members of local groups, opinion leaders share the values, goals and issues of their peers. Their judgement about innovations is considered relevant, and their contribution is expected to improve the fit of innovations to the group needs and values (Greer, 1988; Mittman et al., 1992).

These assumptions found resonance in my findings. In one early example of the opinion leader programme, Estela, then a middle-manager, recruited opinion leaders to facilitate peer doctors' meetings. She believed that practitioners would give more attention and credit to their peers than to her, both because she was a

manager, and because she was not a doctor. The doctor opinion leaders that she recruited to facilitate peer meetings had credit to judge innovations and to provide advice because of the fact that their background, position and role were similar to their peers'. They could also provide first-hand information based on practical experience with the innovations.

> *So, it was not Estela, the manager imposing something that the Secretary of Health determined. It was the colleagues of them saying, "We started doing so in the Magnolia clinic, and it worked; there in my team, I'm working together with the nurse, and it worked. (Estela, programme designer)*

The reliance on the advice of local peers is exacerbated by high levels of uncertainty about innovations (Greer, 1988). A need for trust arises in such situations, where decisions need to be made based on insufficient objective information about the predictable consequences of an action (Lewis and Weigert, 1985).

Trust and reciprocity

Opinion leaders also expected that the practitioners would trust them back to judge and adapt the innovations. This mutual trust and expectation of reciprocity between opinion leaders and peers relate to the sense of collective ownership discussed in the previous chapter. There was a tacit agreement between opinion leaders and peers in which the former would act on behalf of the latter.

> *So, I am writing to people who are my colleagues, and when I write, I think as if I were them in their scenarios of practice, in the clinics. And I have the impression that their reading can go in that same direction. (Aline, nurse, opinion leader)*

Reciprocity seems to be the link between trust and positive actions towards trusted individuals. A sense of social obligation and reciprocity associated with relationships of mutual respect and cooperation was mobilised by some opinion leaders to persuade colleagues. Within the context of those relationships, supporting the position of the opinion leaders about innovations could be seen as payback for their social and practical support, and a way of nurturing a relationship deemed as important.

> *We were a team that when the coordinator needed an extra patient to be seen, what always happened … it was our team that ended up helping. And then the coordination was usually more accessible to our requests. It was a kind of exchange. (Ricardo, doctor, opinion leader)*

Trust and reciprocity were also important in the relationship between managers and opinion leaders. Participants reported that previous relationships with the programme designers, and trust in their intentions, were relevant for their decision

to accept opinion leader roles. Ricardo, for example, mentioned his respect for Marcos and Roberto as the reason why he accepted an educational role in an innovation project. In between the lines of the respect between them, lies a decade-long relationship that goes back to when the three were advanced access opinion leaders of their respective clinics, a shared trajectory that contributed to overcoming the usual distance of the institutional relationship between managers and practitioners.

> *For me, it was the respect for Roberto, the fact that he invited me and the respect for his work ... Marcos, Roberto, they were involved, people that we respect. Even if sometimes we complain, "There they come with something else", we respect the commitment, we know that you are committed and seeking the best for the Health Secretary. (Ricardo, doctor, opinion leader)*

In summary, opinion leaders were trusted by colleagues to judge innovations because they were perceived as similar and belonged in the same social groups, so their advice was seen as relevant to others in similar conditions. They were perceived to have good knowledge of the local context and expected to act in favour of their groups, judging and adapting innovations to fit the local issues and needs. Trust was facilitated by a track record of personal relationships between opinion leaders and peers, which in turn were accompanied by a sense of mutual respect and reciprocity.

6.2.1 Determinants of trustworthiness

Trust in the opinion leaders of this study seemed to be determined, among other factors like similarity and personal relationships with the peers, by the fact that they were attributed positive personal characteristics. Such perception was associated with an expectation that they would act consistently in a way that would be beneficial and no harmful for the group. For example, a trustworthy opinion leader would be expected to provide frank and balanced advice, and to support others in understanding and adopting innovations

Based on the participants' reports, and in previous literature on determinants of trustworthiness and characteristics of opinion leaders, I identified which personal attributes of opinion leaders were relevant for their credibility and ability to transfer trust to innovations. The main attributes were perceived integrity, accessibility and knowledge. Interestingly, knowledge was only mentioned among nurses, what highlighted a possible association between perceived attributes of opinion leaders and the different dynamics of their respective professional groups. The characteristics identified in my analysis were similar to other definitions of credible individuals or opinion leaders in the literature, for example, integrity, benevolence

and ability (Mayer et al., 1995); personification of positive values, social location, and competence (Katz, 1957); or humanistic attitude, willingness to share, and knowledge (Ryan et al., 2002).

Integrity

Perceived integrity was much associated with a commitment to improving the local work environment. Opinion leaders were seen as good professionals, partners of their colleagues, and concerned with the patients. They acted upon their speech about innovations by working hard to provide good patient care. Through these attitudes, they gained the respect and trust of other practitioners.

> *I think it brings you respect because they know that you are working there with seriousness and goodwill so that the process works, often helping this colleague when he is more troubled ... who is proposing is someone who really wants to work hard, is not proposing something to exempt from work. (Ricardo, doctor, opinion leader)*

Opinion leaders were also respected if they seemed to have the same goals as their peers, with no long-standing or hidden agendas.

> *(Interviewer: And how do you think your participation in that process influenced colleagues? Do you think you facilitated in any way the acceptance or adoption of the protocols?)*
>
> *In part, yes, for a reason I've already mentioned, for being a person who is together, who has no conflict of interest, at least I think, I think this facilitates. (Aline, nurse, opinion leader)*

These observations are consistent with previous studies which have shown that failure of opinion leaders to abide by their own recommendations or perception that they had vested interests can undermine innovation projects (Locock et al., 2001).

Accessibility

The second feature of trustworthy opinion leaders, accessibility, was usually represented by their willingness to advise and support colleagues without obligation or compensation.

> *I think that when the people who are innovating, proposing changes, they help others to get there, to overcome their difficulties, to give the first step, to fine-tune a process, this also influences, this openness to be supportive, collaborative. (Jean, doctor, opinion leader)*

Accessibility was closely related with a respect for the others' experiences and views. Supportive and respectful opinion leaders were able to establish empathy with colleagues, opening communication channels and facilitating the convergence of opinions.

> *This ability to adapt to the audience is also an important feature of leadership … Connection, empathy, "Look, I know what you guys go through, I know it's hard, but I think we can go that way." I think this ability to evaluate empathically the teams also helps to mobilise. (Dora, doctor, programme designer)*

Perception of accessibility was associated with a sense that support and guidance from the opinion leaders would be available should any difficulties arose, in particular, when the opinion leaders worked in the same clinic. Previous literature has suggested the role of opinion leaders as sources of both technical and social support to deal with the demands of innovations (Katz, 1957; Greer, 1988). The perception that such support was available improved the confidence to adopt innovations.

> *… and even for our colleagues, when we suggest a change, they accept because they know that we are colleagues they can count on, that will help them. (Ricardo, doctor, opinion leader)*

Conversely, when opinion leaders had a questionable reputation or were not able to establish empathy with colleagues, involving them in implementation backfired to the programme designers, enhancing resistance to innovations. This resistance could be passive and subtle, taking the form for example of *pro forma* adoption or 'work-to-rule' action.

> *… there are some people in the institution that if you were to receive training from them, you would start with a negative image, already disregarding what is said. Even if it's someone technically good, "He's going to talk crap here, will say something he says he does, but we know he does not do". (Luiz, nurse, programme designer)*

The finding that dedication to the local environment and accessibility to colleagues were associated with trust is consistent with the fact that the opinion leaders were mostly of the peer type, therefore similar and closely related to their peers (chapter 2). Accessibility seems to be a key determinant of the opinion leaders' influence because it enables their communication and connection with their peers. If they are not accessible, for all their knowledge, they will not be so influential (Rogers, 2003).

Knowledge

Although opinion leaders in this study were mostly of the peer type, some participants suggested a role for expert leaders among nurses. The nursing

committee was composed by a majority of primary care nurses and a smaller group of specialist, public health and management nurses. The primary care nurses were peer opinion leaders which influence was based on perceived similarity. The non-primary care nurses, on the other hand, were distinct from the target individuals in terms of training and position. As reported by one key stakeholder, the inclusion of those nurses aimed to legitimate the work of the committee in the broad professional group, based on their perceived expertise and seniority. The two quotes below refer to the participation of Helen, a senior nurse with academic and associative roles, in a meeting with primary care nurses to discuss the nursing protocols. A concern was raised about the risks of prescribing penicillin for syphilis, to which Helen answered with evidence and data.

> *… how do you fight fear? When we said that the nurse was going to prescribe penicillin for syphilis, the voices were resistant in saying, "My God, the anaphylactic reaction". And what have we done? "Anaphylactic reaction is easier to occur with shrimp at the weekend or with dipyrone than with penicillin". We worked with evidence to take away this fear, this mystique. (Vicente, nurse, opinion leader)*

> *And then this knowledge of hers resonates on the other nurse, "Well if she showed me this data, she's telling me I'll be able to prescribe penicillin, so I will do it". So, it's not just the respect she has for Helen, or the way Helen talks to her - because Helen is crazy, is quarrelsome, but she shows knowledge. And I think that's another path of credibility. (Estela, nurse, programme designer)*

The report of a role for expert and positional credibility among the nurses is consistent with studies that show that professional networks of doctors and nurses have distinct dynamics of hierarchy and influence. Nurses' networks are more hierarchical and organised around managers, who play roles of mediation and control of the flow of information (West et al., 1999). In contrast, doctors seem to value more experience and knowledge of peers. That would help to explain the less evident role for experts or managers in the diffusion of advanced access, that was mostly driven by the doctors who implemented the first experiences (chapter 3).

In summary, trust in the opinion leaders was determined primarily by the perception of the positive attributes of integrity and accessibility. Knowledge was marginally important, mainly among nurses and in relation to the adoption of new clinical tasks that although evidence-based, were perceived as risky. Integrity was expressed by consistent practice and speech and commitment to improving care; accessibility was expressed by support to colleagues and respect for the experiences and views of others. These determinants of trust were consistent

with previous research on trust in organisations and characteristics of opinion leaders.

6.2.2 Informal connectedness

An important theme developed throughout this study was the role of informal relationships as a mediator of social influence. The opinion leaders in this study frequently relied on personal relationships with their peers to persuade them. Such relationships were informal, out of the context of the innovation projects, and beyond strictly professional collaboration. Personal ties like shared work experiences, participation in the same networks, or friendship facilitated the establishment of trust and contributed to social influence.

> *I think, first, personal knowledge of the other, having already worked together or studied together, having already developed a project together. I think this is an important thing, anyway, already having something else that is not directly the development of that project that you're trying to persuade about … Yes, I think a personal relationship could be better described here as trust. Usually, when we talk about personal relationships, it's more a matter of friendship, of proximity. And I think it's more a matter of trust relationship, established previously, or at least not having a previous relationship of distrust. (Luiz, nurse, programme designer)*

The affective ties present in informal relationships were particularly relevant to establish trust and reinforce feelings of reciprocity and social obligation. Trust has long been recognised to have both cognitive and affective dimensions (Lewis and Weigert, 1985; Mcallister, 1995). Affective trust is facilitated by frequent social interactions of cooperation (e.g. informal meetings or co-working time), which reinforce trust beliefs and motivate reciprocal actions (Mcknight et al., 1998). Opinion leaders, with varying degrees of awareness, relied on the importance of these relationships to the parties involved, and in the expectation of reciprocity, to persuade their peers about innovations.

> *It's the influence by the subjective contact, by the relationships. It's not an imposing leadership. It is a leadership that is together in the informal spaces, that stands together with the peers, that has affective ties beyond the work. And then you can say, "Come on, let's do it, what does it cost to start this". (Roberto, doctor, opinion leader)*

Personal relationships across levels of the organisation were deliberately used to facilitate the implementation of the nursing protocols. To overcome resistance to the protocols in some clinics with opponent opinion leaders, programme designers decided to map and mobilise informal allies in each clinic to work as clinic-level opinion leaders, in addition to the formal opinion leaders of the nursing

committee (chapter 3). These local leaders were identified from within the personal networks of the programme designers rather than through institutional channels.

> *When we started to discuss the protocol development, there was a lot of resistance in the health services, especially from workers with a long time in the organisation and who were better known. And the way we managed to somehow get around that resistance was relying on the actors we already knew personally, convincing these people based upon personal bonds to help us replicating that process. This has played an important role…. the members of the committee knew at least one person per clinic, and in the few cases, they did not know, at least one person per clinic showed more interest in that process. (Luiz, nurse, programme designer)*

They were then asked to adopt the protocols in their individual practice and discuss their experience in clinic meetings and informal contact with teammates. Informal recruitment of opinion leaders was followed by informal persuasion at the clinic level. Adoption of the protocols was reportedly easier where they found such allies and problematic where they could not find one.

> *In the case of the Clearwater clinic, it worked because one of the people had been my colleague in the Master course, where you end up having to support the others a lot. And the other had been my student, and was someone I had supported somehow… In some other clinics, we had more difficulties, also due to very strong leaders who were resistant. In such clinics, we did not find an ally to convince, and it did not work so well. The fact of not having someone with a personal bond that was not resistant made it very difficult to implement changes there. (Luiz, nurse, programme designer)*

Although informal relationships facilitated trust in the opinion leaders, that was not a necessary condition, and sometimes trust was established in first meetings. Trust in the absence of previous relationships was attributed to the reputation of the opinion leader, communication skills, or chance.

> *Now, it has happened already, man, to get into a clinic where I did not know anyone, to do a training and discuss with people how the process was going on there, and I introduce myself … and suddenly it seemed that I had been that person's best friend for thirty years and I cannot tell where that thing came from. I never worked with the person, I did not know the person, but suddenly there was an almost personal bond that made it easier the convincing, do you understand? (Luiz, nurse, programme designer)*

High levels of trust in new encounters within organisations have been explained by a high individual propensity to trust, high institution-based trust, and also by cognitive and social processes, which might be related to the trusted party (Mcknight et al., 1998). Members of the same group and those with good reputations are initially seen as trustworthy. Cooperative social interactions will

reinforce initial trust beliefs; people will express trust in actions towards the other, which in turn will usually reciprocate those actions. Cooperation also provides additional evidence for the good reputation of the opinion leader.

Personal relationships seemed to be a stronger foundation for trust in the opinion leaders of this study than reputation. That explains why Ivan was only able to influence a new team to adopt his ideas on advanced access after some time in the new clinic. As in the literature, his reputation seemed to underpin initial trust of the new team, and his consistent, collaborative practice assured the team of his reliability. However, emotional bonds were needed to act as a guarantee of the behaviour of the new member. Despite a positive reputation and a collaborative attitude, Ivan needed to build informal bonds to gain their trust.

> *Currently, for example, I'm in a new clinic, I built that identity now. So now what I participate in begins to make sense [for the others]. But even so, my influence is less than in a place that I've been for longer … You work together; people see that you are there, exposed, they know who you are, they know your commitment. You have already had a beer with them, you have been in informal spaces with them. Informal spaces are very important. People build bonds from informality. They also build in the workplace, but the relationship of mutual trust is stronger if you build informal ties in other spaces than just the workplaces. (Ivan, doctor, opinion leader)*

In summary, personal connectedness facilitated the establishment of collaboration and trust between opinion leaders and target individuals. Trust triggered reciprocal actions, based on affective exchange, mutual respect, and a sense of social obligation. This sense of reciprocity was used by opinion leaders to persuade colleagues to adopt innovations they supported.

6.3 Social identity and belongingness

Many participants suggested that opinion leaders were influential about innovations for the fact that they were mostly local practitioners, thus seen as 'others like them' by the individuals targeted by the programme. This idea was first analysed as a crossing context factor. Perceived similarity seemed to facilitate trust in the opinion leaders, as earlier shown; and also, to enable social comparison and imitation, as will be described in the next chapter. Here I will discuss another aspect of similarity, which is the common membership to local groups. Membership to the same groups meant that opinion leaders and peers shared a social identity - the group of aspects of an individual's identity that derive from the social groups to which s/he perceives as belonging (Brown, 2000b).

Social identity functioned as a mechanism when a wish to belong in the same group as the opinion leaders motivated the adoption of innovations. The high status of opinion leaders within their groups, reinforced by the institutional recognition, allowed them to express the standards of practice for their groups. Their behaviours concerning innovations became important features of the social identity associated with their groups. Adopting innovations endorsed by the opinion leaders were thus seen by other practitioners as a way of reinforcing their affiliation to the status group represented by the opinion leader. This mechanism was developed upon the idea of group norms of the initial theory.

The status of opinion leaders projected expected benefits in adopting similar opinions and behaviours. Other practitioners could expect that by following their lead – what is represented in Ivan's mention to have 'more active participation' in the group -, they could obtain similar status.

> *We have a certain group feeling, in an area like family medicine, you want to belong to a group, and you have some recognition or status when you can have more active participation. (Ivan, doctor, opinion leader)*

Opinion leaders represented the prototypes of their groups. Therefore, it could be expected that their influence would be determined by the extent to which their peers felt associated, or wanted to be associated, to the idea of the group they represented. The link between self-association to a group and susceptibility to the influence of the opinion leaders is illustrated next by the story of Bento's protracted adoption of advanced access.

6.3.1 Bento's story

Bento received his GP training from tutors who also where advanced access opinion leaders, and who saw on him a promising young leader in family medicine. Therefore, he was expected and prepared to be a residency tutor as soon as he graduated, what in the study setting was a synonym to supporting advanced access and related innovations. After graduating, he indeed took a GP position with training responsibilities, but he did not adopt advanced access straight away as some colleagues would expect. When asked about the reasons for that, he realised that peer influence only became relevant after a year or so of practice as a senior doctor. That was the time he took to feel like a GP educator, or 'one of them'.

> *It makes a lot of difference if the talk or guidance comes from a peer, from someone who is also a practitioner or a preceptor. Right after the residency, I think that this influence was less important for me… I think nowadays this have more influence. I think it has more impact for me*

[now] these people who I consider as peers, who are in situations similar to mine, in assistance. (Bento, doctor, opinion leader)

Despite the time needed for Bento to adopt advanced access, after doing so, he became an opinion leader. He was largely recognised both within the organisation, which awarded his clinic a prize for the advanced access experience, and beyond.

In the Newforest, it still took a couple of years for us to change to advanced access, but from the moment that we did it, we became a model for the network, for other residents. Even my former tutor in the residency went there to know our model, and also people from other cities. (Bento, doctor, opinion leader)

Bento's socialisation as a doctor took place primarily within the group of tutors of the medical residency programme. This group was characterised by frequent exchange and social interaction among its members, internal cohesion of ideas and practices, and marked attachment of its member to the ideal of the group. The growing sense of affiliation to that group's social identity was one key motivation for Bento's adoption of advanced access, what in turn reinforced the group affiliation. Feeling part of the group also made him more prone to look towards senior group members as models.

What most influences me is knowing a little about the work of colleagues, that's the main thing. Interpersonal closeness, frequent meetings, seeing the speech of people, how that person stands, how they see the team, the clinic, the work in primary care ... When you have this identification between peers, when the other works in a similar way to me, our understanding of health, medicine, family medicine, primary care, access is similar, this is a trigger for generating influence, in the sense that it is an interesting model to be followed, copied or embedded. (Bento, doctor, opinion leader)

When Bento talks about the identification and influence between peers within the group of the medical residency, he suggests that influence may have worked in more than one direction within such groups. Previous research has suggested that opinion leaders are influenced by each other as much as they influence other practitioners (Weimann, 1994). As in the literature, processes of mutual influence between opinion leaders were reported by participants, as described next.

In summary, a shared social identity between opinion leaders and peers was both a context element, facilitating trust; and a mechanism, when associated with belongingness. The high-status of opinion leaders within their groups allowed them to associate innovations with social identity and the wish to belong in groups. Because they reflected the group norms and standards, adopting their positions about innovations reinforced the social identity and group affiliation of

other group members. The opinion leaders were more influential the stronger the affiliation of the target individuals with the idea of the group they represented.

6.3.2 Spaces of influence

Social influence processes seemed to be particularly frequent within established groups with high affinity and cohesion, e.g., clinical teams or peer meetings. These groups provided opportunities for exchange and mutual support and facilitated the convergence of opinions and practice. Participants reports suggest that these groups worked as spaces of mutual influence, in which opinion leaders influenced each other, new group members, and the rest of the organisation.

One example of space of influence was the regular meeting of the medical residency tutors, mentioned in Bento's story. The safe and relaxed environment of that peer group, the atmosphere of empathy and trust, made the doctors comfortable to discuss and challenge their opinions and experiences with innovations. This peer group was a space of mutual influence for its members and an important source of influence for the rest of the organisation.

> *In the meetings of tutors of the medical residency, which is a privileged space of people who already propose to have a more critical vision ... there is a friendship relationship that gives us the freedom to say things like, "For God's sake, we are in 2017, what's the problem of using a phone or e-mail". We can say it without looking snobbish. In more informal moments, or even formal meetings but among peers, the power relations diminish, or they are diluted in other ways. That makes the person more open to hearing from you … is not a relationship where people feel that someone is imposing something. (Roberto, doctor, opinion leader)*

Another example was the clinical team of the Summerville clinic. In that group, high task interdependence and constant need for adaptation demanded frequent interaction and mutual support. On top of that, a smaller group of innovative doctors and nurses with ideological affinity developed informal relationships which contributed further to the group cohesion. Their members seemed to anchor their social identity, and trajectories in the organisation, in their participation in that group and the foundational experiences they shared. This clinic was the source of many of the first opinion leaders of this study.

> *We followed as a group, so as a group if one of us was participating, the group walked, advanced along with the proposals that we made. There was a group with an identity there, what facilitated a lot, the identity was collective and not individual. (Ivan, doctor, opinion leader)*

Research on group processes has shown that being part of a group reinforces feelings of belongingness and provides social support. The converge of individual

attitudes to the idea or prototype of the group reinforce the social identity of the group's members (Brown, 2000a). This idea of convergence of attitudes and behaviour within groups is also a foundation of the normative role of opinion leaders.

Within groups with high affinity and cohesion, like clinical teams, the convergence of practices configured spaces of opinion sharing in which influence was more diffuse and horizontal. The frequent and close contact within such groups facilitated exchange, collaboration, and mutual support. Such groups worked became an important part of the identity of their members, influenced new members and the rest of the organisation, and functioned as a source of opinion leaders for the organisation.

6.3.3 Association of opinion leaders with management

If both trust and social identity, as previously shown, were underpinned by the perception of the opinion leader as a peer, it should be expected that moving away from the practitioner role would reduce their influence. Many opinion leaders indeed were invited to management as a form of recognition for their contribution to the organisation. This move was shown to contribute to status, satisfaction and career advancement, but also to risk their credibility, as will be discussed next.

Managers were usually seen with distrust by the practitioners because of chronic structural problems for which they were deemed responsible, e.g., understaffing, or for the fear that they could impose institutional or political agendas.

> *It is a problem for the manager who visits the clinics; he is not identified as part of the group. He is viewed with distrust by people, who think that he works less, is bad, will impose something, represents interests that will contradict theirs. (Ivan, doctor, opinion leader)*

Opinion leaders who became managers had their image associated with institutional problems and were frequently seen as 'turncoats'. They were blamed for not solving chronic barriers to innovation that were usually beyond their actual role and power in the organisation. The association with institutional problems hits harder the practice- and middle-managers, which by one side were in close contact with the practitioners and, by the other side, had little control over institutional resources or decision-making in the policy level.

> *What I've noticed is that some management professionals, but then not only nurses, I would say nurses, doctors, among others, they often needed to risk their necks in a situation of institutional tension. And there is that issue of division, like, "Oh, I don't agree with what he says, and I will take it as personal, as I don't like this person anymore, so I*

won't give more credibility to what he says." … And then these things that are not even directly related to protocols ... are personalized. And then when this person, that the network sometimes put an expectation that could solve something that unfortunately is not in the scope of her attributions, when this person "fails" in the eyes of the network, she gets weakened and burned. (Aline, nurse, opinion leader)

The conflict between expectations of peers and actual attributions was also observed in a previous study in the same setting (Florianópolis) with doctors who became practice managers (Loch, 2009). The participants of that study reported that unexpected and conflicting priorities prevented them from implementing the agenda that motivated them to assume the position. Similar issues were identified among doctors and nurses who became clinical managers in hospital settings, in particular, insufficient preparation and unclear delegation to solve the problems that they faced (Forbes et al., 2004; Townsend et al., 2012).

Beyond the actual change in responsibilities and conflicting priorities faced by new managers, opinion leaders who remained as practitioners also had their credibility damaged if their image was excessively associated with management. Too much time in non-clinical activities or enthusiasm and dedication to several innovations were seem with suspicion by colleagues. This happened with Bento, who reported feeling a 'half-peer' in peer meetings because of his frequent collaboration with managers. Being a 'half-peer' meant that he was not a whole member of the practitioners' group. Therefore he could be less sensitive to the issues and needs of other practitioners, and his advice should be taken the caution reserved to 'out-groups' (Brown, 2000a).

> *I realise that, today, I am a very associated person, in the district, in the clinic, perhaps in the whole network … people associate me a little with management. So, I don't know if because of the residency, or because I'm involved in a lot [of things], so I think that this more suspicious look, he does exist, "Ah, but this one is from their team." I think hence the credibility, in the sense that there is not the peer, maybe… It's not maybe a peer as it seems to be, it's maybe a half-peer. I think so, I feel, I have this feeling, I've had several times in the district meetings, for example. (Bento, doctor, opinion leader)*

Conversely, other opinion leaders seem to have preserved some peer credibility even after moving to management. This was observed when they kept an ongoing commitment to clinical work or took the side of the practitioners when facing conflicting demands. Such positions were more feasible for practice managers, which by the nature of their role had split loyalty and accountability to the clinical team and the management (chapter 3). By keeping clinical work, they were also able to adopt innovations in their individual practice, thus acting upon their beliefs.

And I think one of the things that made it easier was because I continued to see patients too, I took on both a team and the coordination. So, working as a nurse and as practice manager showed them that I was attending too, I was not just giving orders. Everything I talked to them I also did. (Janete, nurse, opinion leader)

In summary, some opinion leaders in the study setting became managers over the years, what brought them professional status, career advancement and job satisfaction but also jeopardised their credibility. Most had their image associated with institutional problems and could be seen as less sensitive to the issues that concerned the practitioners. It was not the management position per se, but the association with the management side that undermined their credibility. Practitioners involved in several projects or enthusiastic about innovations could be seen with distrust and lose credibility with colleagues, while managers who kept a commitment to clinical practice or assumed the side of the practitioners in conflicting situations were able to preserve credibility and influence.

6.4 Summary of findings and refined theory

The mechanisms and outcomes of the related initial theory were modified but not changed in its nature. In the first mechanism, opinion leaders 'lend' the trust they hold with their colleagues to the innovations they support. In the second, they highlight innovations as important features of the identity of their groups, thus associating such innovations with a positive sense of identity and rewarding feelings of belongingness. This mechanism was developed upon the 'group norms' mechanism of the initial theory drawing upon literature on social identity.

The two mechanisms reinforce each other. Trust in the opinion leaders facilitates their role in changing subjective perceptions about innovations; a shared social identity makes the opinion leaders more trustworthy to their peers. Moreover, trust seems to be an overarching mechanism of the programme, working as co-mechanism to the other theories. For example, the trust of opinion leaders in managers facilitated engagement of the former in the programme (theory 1).

About the outcomes, the distinction between acceptability and adoption was not always clear. Trust in the opinion leaders and wish to belong in their groups were reported to reduce resistance, raise interest, improve acceptability and promote intention to adopt. However, overt behaviour change seemed to depend on other determinants like structural conditions, and it will be better examined in chapter 7.

The determinants of trust were refined with support of literature on interpersonal trust in organisations. Homophily was a major determinant and a crossing context factor. Other determinants were perception of integrity and accessibility, making the opinion leaders reliable and approachable; and the presence of informal relationships between opinion leaders and peers, which reinforced a sense of reciprocity and social obligation. Although these factors were suggested in the initial theory, they were integrated into causal processes in the refined theory.

Relatedly to what I observed with similarity and trust, the perception of membership to the same local groups underpinned the mechanism of social identity and belongingness. Examples of how the perception of common group membership mediated social influence were extracted from reports of opinion leaders who assumed management positions, turning in out-groups to their peers. The association of opinion leaders with management emerged from the data as a context factor.

Differences between the innovations

The key difference on how this refined theory applied to each innovation was related to the distinct social dynamics of doctors and nurses' professional groups (section 6.2.1). Nurses have more structured and hierarchical networks than doctors, who in turn value more peer experience and practical knowledge. Consistently, nursing protocols leaders were more likely to be senior nurses with academic or formal leadership roles while advanced access leaders were mostly young doctors who emerged from local experiences of advanced access and influenced peers through informal exchange.

The differences of doctors' and nurses' professional networks also meant that the association with management was more a problem for doctors and advanced access leaders than nursing protocols leaders. Advanced access leaders were also more likely to become managers for reasons like complexity of the innovation and resistance among clinicians – this was discussed in chapter 5. Likewise, the idea of spaces of influence was built upon examples of advanced access only. However, in this case, as it was a late emergent aspect of the theory, I had less opportunity to explore examples related to the nursing protocols. The topic of spaces of influence is suggested for future research in chapter 8.

In general, the mechanisms of trust and social identity, and the presence of positive attributes and informal relationships with peers were related to influence across both innovations. Programme theory 2 seems to explain broader aspects of opinion leadership than programme theories 1 and 3, closer to a general

explanation of the opinion leaders' credibility and influence. I will revisit this idea in sections 8.2.4 and 8.2.5 of the discussion chapter.

6.4.1 Refined theory

Based on the findings shown in this chapter, I developed two refined theories, respectively based on the mechanisms of satisfaction and ownership. I preserved the structure of the initial theory whenever possible to facilitate comparison, and added emergent causal processes as nested CMO configurations, meaning that they are related to and dependent on the previous causal explanation. Such nested CMOC correspond to mechanisms operating within contexts (Westhorp, 2018). The refined theories are shown below.

Refined theory 2.1 - Trust

The participation of opinion leaders in implementation of innovations contributes to building trust in those innovations among practitioners, through a transference of the credibility of the opinion leaders among peers to the innovation process. Trust will reduce restraints and improve interest and acceptability of innovations. The sense of reciprocity that accompanies trust will promote more intention to adopt innovations as a reciprocal action.

Acceptability and intention to adopt will result if there is a climate of uncertainty, which stresses the need for reliable information; if the opinion leaders are perceived by peers as similar, so they understand the group values and beliefs; and if they show integrity and are accessible, so others trust they will provide support to deal with the innovations. Trust is also facilitated by personal relationships between opinion leaders and peers, which are associated with mutual respect, a sense of social obligation, and reciprocal actions.

Trust will facilitate other mechanisms of social influence, e.g., trust of opinion leaders in managers will facilitate the initial engagement of opinion leaders in innovation; the trust of practitioners in peer opinion leaders will facilitate the use of their examples as models.

Refined theory 2.2. - Social identity

The endorsement of opinion leaders to innovations highlights those innovations as important features of the social identity associated with their groups. Opinion leaders are able to do so because of their high status within local groups, which

is reinforced by the institutional recognition for their contribution to innovation. The association of innovations with the group's identity will bring a sense of reinforced affiliation and belongingness to those who consider adoption of the innovations. The endorsement of opinion leaders will lead to more intention to adopt because they are seen as members of the same local social group of the target individuals, and because of their credibility and status, which together allow them to change subjective perceptions about innovations within their groups and reinforce positive associations between innovations, social identity and group affiliation.

Opinion leaders who engage too much in innovation or move to management positions may improve their chances of career advancement, but also have their image associated with institutional problems and step out of the social group of practitioners. They may be seen as less sensitive to the issues and concerns of other practitioners, or turncoats, and lose the shared social identity which underpins their influence. The loss of credibility can be softened by showing commitment to clinical practice or choosing the practitioners' side when facing conflicting priorities, what is easier to lower-rank managers who work between the clinical and management worlds.

Within established groups like clinical teams and peer groups, the atmosphere of mutual support, trust, and empathy promote convergence of opinions and mutual influence among members. Such groups may configure spaces of influence for their members and contribute to producing social influencers for the rest of the organisation.

Chapter 7 Promoting innovation adoption

7.1 Introduction

This chapter presents findings related to Programme Theory 3. I will explain how the experience of opinion leaders with innovations influence the adoption behaviour of their colleagues in various directions. Theory 3 initially included three distinct causal pathways resulting from the same intervention component, one of them explaining negative outcomes. In the refined theory, I integrated the negative outcomes in the other two causal pathways.

The initial theory shown in chapter 4 is repeated below.

Initial theory 3 - Promoting innovation adoption

The experience of opinion leaders with innovations demonstrates the feasibility, advantages, and risks of adopting, reducing uncertainty and improving confidence among practitioners. Improved confidence will encourage more adoption of innovations. Adoption will result if the other practitioners have interest in the innovations but are uncertain about the consequences of adopting, which highlights the need for reliable information based on experience; and if the opinion leaders are seen as similar, so their experience is transferable.

The experience of opinion leaders with innovations also highlights practice gaps when compared to their practice and reinforce peer pressure in favour of innovations. Perception of gaps and peer pressure will promote a wish to conform to perceived standards of practice, thus leading to adoption. Adoption will result if there is a climate of imminent change, demanding from the practitioners a position about innovations; and if the opinion leaders are seen as similar, so their experience is comparable, and the excuses to avoid adoption are weakened.

If the opinion leaders are too distinct from the other practitioners to be seen as feasible models; the same opinion leaders are repeated used in comparisons, or there are persistent local barriers to innovation, comparison with the opinion leaders will trigger defensive attitudes. A sense of unfairness in comparison with the opinion leader will elicit feelings of depreciation, resentment, envy or injustice, which may reinforce initial resistance to innovations.

Although this might read as three separate theories, I analysed them as a whole based on an initial assumption that they were interlocked pathways. In this chapter, I will support that initial claim by analysing interrelated context factors which determined the divergent pathways.

Guided by this initial theory, I identified elements and causal processes from data analysis. Then I compared the findings with the initial theory and modified it accordingly to generate the refined theory. The interpretations in this chapter have a greater focus on identifying causal processes than theory elements when compared with the chapter on the initial theories, reflecting a deeper understanding of the programme.

The mechanisms are presented alongside context factors to which they are contingent, consistently with the realist logic of generative causation. First, I show how the examples of opinion leaders show the feasibility of innovations and reduce uncertainty, encouraging adoption. Then, I demonstrate how opinion leaders persuaded more resistant colleagues to adopt innovations through reinforcing conformity pressure. Key aspects of the context are detailed in specific subsections. Small summaries at the end of each section show the processes that fed into the refined theory. Last, a summary of findings and the refined theories come at the end of the chapter.

7.2 Improved confidence

The hypothesis that making the opinion leaders' experiences with innovations available for scrutiny and debate would promote more adoption found resonance in the data. Opinion leaders seem to have contributed to improve understanding about innovations, reduce uncertainty and concerns, and show how the innovations could work in practice. They also seem to have caused unexpected negative effects, like passive resistance or defensive behaviours, which I will seek to explain.

Persuasion by example

Most participants agreed that opinion leaders persuaded others based on actual practice with the innovations. A representative example was the widely acknowledged role of the first advanced access opinion leaders. They were innovative doctors and nurses who independently implemented advanced access models in their teams, sometimes facing local resistance. Initial improvements gradually raised interest and reduced restraints of more sceptical colleagues, who started to see the benefits of the innovation and consider adoption.

> *The new ideas were initially little accepted, were seen as a bigger work for the team, but after they saw a doctor or a team running it, they ended up seeing that it was not that difficult to execute. And since it was possible, they also ended up sometimes wanting to implement in their team. One or two doctors or nurses starting to do, the other teams*

ended up liking the idea and lowering the guard and managing to think better and see that it was often even easier for the internal organisation of the team. (Janete, nurse, opinion leader)

Advanced access represented a rupture with previous practice, so the practical examples caused some discomfort and unsettledness, which was important to challenge the perception of practitioners about their current practices.

When people have a comfort zone, they believe that what they do is right, that it is good the way it is, and if that conviction is not challenged, if it has no discomfort, they are hardly going to change. They need to be presented to the new model and to the failure of their work process to realise that it is wrong. (Ivan, doctor, opinion leader)

There was a reasonable degree of a priori resistance to changes, in particular to a big change like advanced access, for reasons that included chronic lack of resources (see section 3.3.2). Opinion leaders were reported to weaken initial resistance of colleagues to change by confronting catastrophic arguments with reassuring evidence from their experience.

Our role was to bring some of the theoretical model of advanced access, this alternative, to break the rigidity a little, that narrative of "cannot do because of this, that and that". We saw lots of resistance regardless of the real possibility of implementing. So, we were breaking up a little bit these preconceived ideas, like, "If we don't have time slots on the agenda, we'll be working until late in the evening"; "No, we will not, do you want to see?" (Murilo, doctor, opinion leader)

The nursing protocols were generally received with fewer restraints than advanced access; they could be adopted in the space of the individual consultation and were generally associated with an idea of professional effectiveness. Still, the experience of opinion leaders was important to clarify potential advantages and provide worked examples, motivating adoption trials.

"Look, I started using the protocol; it's better." You put examples, "Look, first I needed to go there, knock on the doctor's door, wait; and now, I'll solve it." So, when you use examples of what it makes your daily life easier, and you are going through the same, same difficulties, a great demand, I think that motivates these people to use the instruments, the protocols. (Clara, nurse, opinion leader)

Dealing with uncertainty

Despite the differences (chapter 3), both innovations elicited some degree of apprehension. Advanced access elicited the fear of not being able to deal with an 'unstructured' agenda and of being overwhelmed by the excess of patients. The nursing protocols were associated with the fear of malpractice charges or professional litigation for executing tasks restricted to doctors. Opinion leaders

seemed to reduce the apprehension and concerns associated with the innovations, improving the confidence of colleagues to deal with the risks.

> *… the fear of the unknown that we had at the beginning, the fear of professional litigation, of not having support from management or the professional council. It was basically convincing through the practice that removed this fear. And people began to see that it was not harmful, by seeing another professional doing it in a correct, continuous, safe way that will not put them at risk as professionals. (Vicente, nurse, opinion leader)*

They also highlighted the advantages of innovations against potential risks. In opposition to the legitimate concerns earlier mentioned, they would show for example, that advanced access could improve the satisfaction of patients and professionals, or that the nursing protocols could improve professional autonomy.

> *So, there is a fear of the unknown initially, but from the moment you see your colleagues doing, and you understand that you may be more helpful, give a better response to patients, decrease the times you are cursed, all this helps people to adopt the protocols. (Luiz, nurse, programme designer)*

The diversification of adoption examples provided cumulative evidence of the feasibility and advantages of the innovations, motivating a growing number of adoption trials. Successful adoption trials, in turn, allowed positive temporal comparisons with oneself that reinforced self-efficacy, adding up to the confidence initially provided by the opinion leaders' examples.

> *Some people see that their colleagues are doing something well, they feel embarrassed not to have tried, they start doing it, and they end up following because they see that the barrier is over. (Janete, nurse, opinion leader)*

Evidence from experience

What seemed to make the examples of opinion leaders convincing to other practitioners was the fact that they were in similar roles and positions and worked in similar settings with similar problems. Such 'comparable' experience would be used by their peers as indirect evidence of what would it be like adopting the innovations in their settings.

> *… and then from the moment you see that it is possible through the practice of your colleague who has the same position in the institution as you, you say, "No, we have this power". It is an empowerment that comes from the collective. (Aline, nurse, opinion leader)*

The importance of local experience with the innovations as a source of influence is illustrated next by a short story involving opinion leaders and management. In 2016, during a severe budget restraint, all the senior managers in Florianopolis

were compulsorily allocated to part-time clinical work, as an effort to maintain the provision of care. At that time, members of the nursing committee who were managers (chapter 3) would be criticised by nurse practitioners for promoting innovations that they were not willing to uptake themselves. Assuming part-time clinical work gave them the opportunity of acting upon the managerial discourse, demonstrating the protocols in practice. By doing so, they reportedly regained some credibility to face emerging resistance to the protocols.

> *What happened this year when we went to the clinics, I think it helps a bit in this. Because it's one thing for me, as coordinator of the protocol project, to write what others have to do and why they have to do it. "I think Luiz is a cool guy and such, I agree with what he says, but I doubt he could do what he writes in the protocol here at the clinic". So, the fact that we were going to the clinics and doing it, it helps, too. (Luiz, nurse, programme designer)*

Similarly, participants reported that observing the opinion leaders' practice was more important to change the minds of reluctant practitioners than discussing their experience in meetings. As an example, middle managers of one district promoted an exchange of experience between teams that were resistant to implementing advanced access and other teams with consolidated experiences. The 'resistant' team would spend a half-day in the clinic of the 'experienced' team, shadowing opinion leaders while they worked in the advanced access system. Participants reported that after such visits, teams who had resisted advanced access for years ended up accepting an adoption trial.

> *The whole team went to know the experience of another clinic. It was not someone saying, "You have to do it" anymore. They saw how it was being done there; they heard from the workers that it was positive; they saw how calm it was in the clinic. Even so, I left [the clinic] and I could not really, effectively implement … It began to make sense to change the access when we left the clinic and went to see where it is working, where is changing. Because otherwise, it seems that it is not concrete, it's too much think that it will not work. So, I realized that it started to make sense. And people accepted, they went after it. (Clara, nurse, opinion leader)*

The introduction of innovations in health organisations exacerbates uncertainty which is inherent to medical practice (Greer, 1988), in particular in primary care (Heath and Sweeney, 2005). The higher the uncertainty associated with innovations, the more practitioners will seek reliable information to interpret the validity of those innovations to their practice (Mittman et al., 1992; Gabbay and le May, 2004). That would explain reliance on peer opinion leaders who had experience with the innovations, as I observed in this study.

Proximity and local support

Persuasion was also facilitated by the proximity between opinion leaders and peers, in particular, co-working in the same clinic. Such proximity provided a sense that support of the opinion leader would be available if needed. One example was reported in relation to the distribution of nursing committee members across the clinics. In the clinics that counted with an opinion leader in the team, adoption of the protocols was reportedly easier.

> *The members of the committee, they are not so uniformly on teams and clinics, but it is quite characteristic in the clinics that there is someone of the committee, that things go a little further. The acceptance is greater. Having someone who helped produce the material near you gives you a sense of security if you have any questions. So, it's easier to do what's written there if you know you have someone who can support you. (Aline, nurse, opinion leader)*

Conversely, not having their support to use the protocols was reported as a reason for not adopting, even though the professional was trained and had distance support of the nursing committee if needed. In the example below, an opinion leader member of the nursing committee reports a monitoring visit to a colleague after training on the protocols. The 'lack of support' mentioned here sounds broader than not having an on-site opinion leader, possibly referring to not having any colleague, nurse or doctor, to count on in that matter.

> *The other day there was an episode at a clinic, a nurse colleague went there, had a urinary tract infection, was taken in by a nurse and the nurse placed her in another queue to be attended by a doctor. And then she asked, "But why don't you solve it, it is nothing complicated"; "No, not here, we do not have support here". (Clara, nurse, opinion leader)*

The situation reported by Clara, of being the sole adopter of innovation in a clinic, was reported as an issue by other nurses. It seems that they did not want to be seen at odds with the practice locally accepted; rather than innovators or mavericks, they wanted to be seen as standard professionals. On-site opinion leaders backed innovations as 'normal' practice. Having others doing the same reinforced the perception of innovations as acceptable, avoiding unfavourable comparisons or criticism.

> *…beyond learning a certain procedure, I also somehow beacon that procedure, by not having different behaviours among professionals. My colleague and myself handling a particular health problem in the same way. (Vicente, nurse, opinion leader)*

Role modelling

In addition to showing the feasibility and advantages of innovations and improving the confidence of colleagues, opinion leaders worked as models of the new practices they adopted. They promoted behaviour change because colleagues saw them as positive and feasible models. Imitation of similar models was a process much mentioned by participants of this study. When I explained my theories in the interviews, some identified that I was talking about 'the little friend effect'. Roberto, acknowledged as the author of this metaphor, explains below.

> *I joke that this is the 'little friend effect', one sees a friend with a new toy, also wants the same toy. So, he was afraid of the toy, it could do damage, he could fall, get hurt, but he saw that the colleague is having fun so now he also wants it. … I'm going to jump off a high rock there, and I see my dad or older brother jumping off the high rock, they're adults, this is going to influence me because I want to be proud to be like them. But so, I see another guy my age, a child there, jumped happily from the stone, I am the same age, have similar conditions, physical type, this will influence me much more to jump from the rock. (Roberto, doctor, opinion leader)*

Opinion leaders who showed enthusiasm, satisfaction, or improved status were particularly effective models. By imitating their practice, others expected to enjoy the same satisfaction and status.

> *Some people see others who have already started the process or who seem to be excited about the process as some kind of leadership. They think these guys are cool, they agree with what they say and see that they are doing what they say should be done. (Luiz, nurse, programme designer)*

Reflecting on his role, Roberto suggested that maybe people would seek in others who look more satisfied or successful something that they felt missing in themselves.

> *I think people look for a mirror to achieve an enthusiasm at work that maybe they do not have and when they see someone enthusiastic and in a similar situation. (Roberto, doctor, opinion leader)*

Many authors have suggested that opinion leaders' interventions work through modelling and imitation (Rogers, 2003; Valente and Pumpuang, 2007; Kronberger and Bakken, 2011; McCormack et al., 2013). In social cognitive theory, observational modelling is the use of the experience of similar others as indirect evidence about one's situation. If the model is perceived as similar enough to allow the transferability of the observed lessons, then observing their successes and failures performing a given behaviour will affect the observers' perception about their self-efficacy, or capacity to perform that same behaviour (Bandura, 1977; Bandura, 1988).

Opinion leaders also worked as role models in a broader professional scope, beyond the innovation-specific behaviours which were targeted by the programme. Participants frequently referred to the opinion leaders in this study as models of practice. Their identification as models was probably facilitated by the context of primary care in Brazil. Family medicine is still an emergent medical speciality in Brazil, and most primary care doctors do not have speciality training (Augusto et al., 2018). Primary care nurses traditionally have received a load of administrative roles and only recently have been allowed more participation in clinical care (Nascimento et al., 2018). In such context, advanced access and nursing protocols were ground-breaking innovations, way beyond the national policy and the experience of other cities. Therefore, the opinion leaders of Florianopolis occupied a vacant space as role models.

> *Professional recognition is relevant because family medicine is still consolidating among other medical specialities in Brazil. Most family physicians are young, and examples of professionals who have had the same social function are lacking, there is no previous generation of family doctors. So, this professional recognition had more weight, in the sense of seeing people who maybe are playing well that role of family doctor that they mirrored, and they would like to have that recognition as good professionals in this area doing similar things. (Jean, doctor, opinion leader)*

The recognition and status attributed to the opinion leaders inspired both imitation and competition for the same status. Other practitioners made efforts to show that they were able to attain the same standards of the opinion leaders. In this effort, practitioners adapt and reinvented innovations to stand out against their colleagues. The reinvention of innovations within the scope of this social competition contributed to ownership of the innovations, and the emergence of new opinion leaders.

> *I assumed the coordination, and I saw the models of the other clinics, and I thought, "This I can do too, and I can do better." … Because we thought the idea was good, but the way it was being made in the other clinic would not make us comfortable, so we did differently. And we did differently so well that other teams followed, now all are working with those scheduling stations … and we are becoming a model, every week there's someone there to see how my teams are working. (Diana, doctor, opinion leader)*

In summary, the experience of opinion leaders with innovations seems to have contributed to adoption by challenging the perception of colleagues about current practice and improving the understanding of the feasibility, risks, and advantages of the innovations. Their examples then reduced uncertainty, provided reassurance and improved confidence to try the innovations. Successful adoption

trials allowed positive temporal comparisons with oneself, reinforcing self-efficacy and contributing to sustained adoption. The opinion leaders provided useful examples and models based on the perception that they were similar to the colleagues, so their experience could be used as indirect evidence by the others, in particular, if directly observed. The proximity between opinion leaders and peers brought a sense that support would be available if needed, reducing the perceived risk of change. Opinion leaders who showed satisfaction and status associated with the innovations prompted imitation and competition to achieve the same satisfaction and status.

7.2.1 Perceived similarity

As discussed for programme theory 2, perceived similarity of the opinion leaders was an important determinant of social influence; it seemed to facilitate trust in innovations (through perception that the opinion leaders were oriented to the same goals) and a sense of belongingness (through perception that the opinion leaders shared a same social identity). Here in theory 3, I will explore another aspect reported by participants, which is the perception of similar positions and work conditions (e.g., number of patients, the structure of the team). The hypothesis that similarity would facilitate influence underpinned the design of the programme, e.g., in the choice of the opinion leaders who presented in the Access Workshops, or of the members of the nursing committee (chapter 3). It was an intuitive choice that, retrospectively, resonated with theories which seek to explain social influence (Rogers, 2003; Bandura, 2006).

In particular, opinion leaders who managed to successfully adopt innovations facing the same problems of practitioners in other clinics were seen as relevant examples.

> *People see that a colleague who has a similar reality - either because they are also a practitioner, attending patients, or because they have similar problems like lack of staff - manages to develop the work, the experience; this helps people to realize that maybe they can do that, that is interesting, that the colleague is not suffering from it, on the contrary, it becomes something interesting, wanted. (Roberto, doctor, opinion leader)*

The examples of opinion leaders from challenging work settings were particularly persuasive. The first advanced access opinion leaders came from clinics with poor work conditions, excess of patients and insufficient structure and staff. Their examples showed the others that innovations could work anywhere.

> *When I was with other people I tried to say, "look, what you're talking about that you cannot do, that is what I do in my practice, then reflect*

a little." It helps a bit because it's the Tulip clinic because the whole network has the idea of that as a difficult place, a place that has a needy population that uses a lot, so this helped as a business card if the Tulip succeeds others lose a little the ability to say that in their clinics it cannot be done. (Murilo, doctor, opinion leader)

This assumption is consistent with social comparison theory, which predicts that comparing one's situation with someone who is perceived to be in a worse situation may improve self-esteem (Festinger, 1954). Likewise, in the study setting the comparison with others worse-off seemed to reduce the perceived weight of local problems, allowing clearer assessment of the innovations.

7.2.1.1 The Summerville clinic

Sometimes the opinion leaders would take for granted or overestimate their similarity to the peers, whom in turn could have quite distinct perceptions. The different perspectives are illustrated below by contrasting the reports of two opinion leaders of the Summerville clinic on how they saw the external receptivity to their experience of advanced access.

We were in the same position as other colleagues, working with a team with the same dimensions, professionals, physical structure, population size. So, when we proposed innovations in a context very similar to other colleagues, this helps that people apply those changes in their context. (Jean, doctor, opinion leader)

When we went there in the Municipal Health Forum and showed how the experience was happening, we may have generated two things. First, a questioning, although I am a peer practitioner, "you do it because your reality is different from mine, you are in a clinic that has a long history of training programmes, that has a more balanced population size." (Roberto, doctor, opinion leader)

The Summerville clinic was in a catchment area deprived and exposed to violence which completely relied on public health and social services. Their teams, on average, saw more patients than other clinics. Because of hard conditions and the pioneering of their experience of advanced access, they were for years the gold standard of advanced access for the managers. However, practitioners of other clinics would not always see their success with the same positive eyes. They would say that the team was too innovative, that the access system imposed a high burden on the workers, that the model was unfeasible in other clinics. There was a mismatch between the positive view of the local opinion leaders and managers and the more cautious view of most practitioners about the sustainability of that model of access.

And the Summerville has always been known as a clinic with somewhat more advanced access than the others. And often it was

negatively seen by the other clinics that would say that it did have more advanced access, but that everyone was sick, that they were all crazy. (Janete, nurse, opinion leader)

Two main reasons accounted for a certain feeling of distrust against the Summerville clinic. First, the group of opinion leaders of that clinic was much more innovative than the average practitioners in the organisation. Too innovative opinion leaders were seen as extreme examples by colleagues, which can cause alienation rather than imitation (Locock et al., 2001; Rogers, 2003). Second, the clinic had a smaller number of patients per team and more intensive support from management due to its size and to the presence of training programmes. If by one side the training environment contributed to local innovation by attracting skilled and proactive practitioners, by the other it created a difference which was seen by some colleagues as a privilege, generating envy and discrediting their opinion leaders.

From his long experience in the opinion leader role, Roberto was aware of the potential problems that excessive distinction could bring to social influence. After receiving some criticism in a meeting in which he presented the Summerville experience, he reflected on the need to highlight similarities with other clinics and establish empathy and connection with the peers before any further attempts to persuade about the value of advanced access.

> *Because they will already say that I only do it because I have certain conditions. So, I need to show that my conditions are very similar to theirs, we are talking in this context here, with this assistance pressure, this team, we know that teams have different situations, how to use some elements of that experience for that other context? (Roberto, doctor, opinion leader)*

A similar point was made by another participant which also suggested a saturation of the Summerville clinic example over time.

> *The discourse that is easy, that is just a matter of wishing, ends up driving away a lot of people. It has to start from a more empathic point that we know that being in a clinic is cumbersome, exhausting, but we are going to work the difficulties and try to see what can be improved. (Murilo, doctor, opinion leader)*

In summary, the perception among practitioners that the opinion leaders were similar to themselves in terms of background, position, and work setting, allowed the use of their experiences as indirect evidence to assess the potential fit of the innovations to their circumstances. Comparisons with others in worst situations reduced the perceived weight of the local problems, motivating the practitioners to assess the innovations and their capacity more positively. Adoption examples which were not seen by the other practitioners as useful to their particular

situation were rejected or enhanced resistance to the innovations, usually when the opinion leader was considered too innovative or beneficiary of special work conditions. This comparison with opinion leaders which were in different situations elicited a sense of unfair comparison that counterbalanced the confidence mechanism, as will be addressed in the next subsection.

7.2.2 Detrimental judgement and unfair comparison

Some practitioners reacted defensively to the comparison with the opinion leaders, keeping attached to current practice and resisting to the innovations. Defensive reactions happened when they felt the comparison as excessively judgmental, detrimental, or unfair. For example, if demands of the change process were minimised, local barriers were not acknowledged, or the opinion leaders were too distinct. In such situations, the practitioners felt unable to keep up with the expected standards represented by the opinion leaders and ended up alienated of the change process.

Defensive reactions in response to the minimisation of local problems were observed by Roberto, and these made him change his persuading strategy, as reported earlier.

> *We should try to involve all those who are developing good access practices in various contexts, trying to show the various contexts where that experience works and that it can work. Trying to avoid the situation of saying, "Ah, but why don't you guys do it, we're doing it, people, it's so cool, it's easy to do," no, that can generate a sense of being called a vagabond, of being despised, and the person creates resistance. (Roberto, doctor, opinion leader)*

In fact, many examples of defensive reactions to strong opinion leaders were related to the Summerville clinic. The innovative opinion leaders of that clinic, like Roberto, were outliers, sometimes seen as radicals by the colleagues. This image limited their ability to work as feasible models to more average, or ordinary colleagues.

> *"There they come, the people of Summerville, the ideas of Summerville". For a long time, we had the stigma of being crazy. There was this resistance. We got that fame. I think it's for the new… it was too new for them. They said we wanted to invent fashion, to give more work to the others. (Vicente, nurse, opinion leader)*

One such ordinary practitioner was Cora, a doctor of the Summerville clinic that was resistant to most innovations proposed by the innovative colleagues. Cora only adopted advanced access after its incorporation in municipal policy and monitoring panels, which implied in administrative controls and sanctions. Even

though she resisted to advanced features of the model like the use of e-mail for booking appointments and communicating with patients. Participants that recounted her story observed that she was unable to keep up with the speed of change, and possibly felt the constant comparison with the colleagues more as coercion than inspiration.

> *In the Summerville, sometimes, for example, the booking of appointments by phone, the team of Cora ended up not adopting and becoming more and more resistant. So, I do not know if it was exactly related if she got embarrassed and perhaps coerced, but all the other teams ended up adopting and her team did not. And it is possible that seeing the form of how it was conducted, that everyone adopted has made the situation worse. (Janete, nurse, opinion leader)*

Cora's growing resistance to each new development of advanced access can be seen as an instance of change fatigue rather than resistance (McMillan and Perron, 2013). This concept has been developed to explain reactions of professionals who feel overwhelmed by continuous organisational change and usually react with passive resistance, stress and burnout rather than aggressive resistance or overt opposition to change (Nilsen et al., 2019; Camilleri et al., 2019). I will return to the concept when discussing opponent opinion leaders later in this chapter.

Another situation similar to Cora's took place in the Tulip clinic when Murilo proposed the same innovation, booking of appointments by email. The reaction of the other doctors was similar to the 'stop innovating' of Cora. They asked him not to do it because it would 'look bad' for them. Different from the Summerville clinic that had a majority of innovators, in the Tulip clinic, Murilo was a solitary voice for advanced access in the clinic, so he decided to wait.

> *The first time I proposed scheduling by email was at that time that I had no partners in the clinic, before Cris arrived. And the first reaction was negative, "No, you cannot do it because it will look bad for me". There was this talk from another doctor, and there I did not feel ready to sustain. (Murilo, opinion leader)*

A more propitious moment was created with the arrival of a new doctor with similar views. They adopted in their teams as a pilot and presented the idea again, with some results, in the clinic's meeting. Their local examples and persuasion created local pressure and the other teams ultimately conformed to advanced access.

During the stakeholders' consultation, one programme designer observed that early opinion leaders like the Summerville were seen as positive models in the beginning, but lost attraction over the years. The repeated use of the same

opinion leaders exposed them to criticism and envy, saturating their examples and limiting their influence.

> *I think we ended up exposing it so much that it generated jealousy, "It's all about the Summerville." If you created a resistance to the Summerville, so leave it alone there, let's look for other examples to show that it is not the exclusivity of the Summerville. I think because of the peculiarity of Summerville being an example, maybe the pioneer, and having a very good group there, it became an example for good and bad. (Murilo, doctor, opinion leader)*

In summary, the comparison with opinion leaders was sometimes perceived as unfair, generating feelings of incompetence and failure, when it was excessively judgmental, minimised local barriers to change, or the opinion leaders were too distinct. In such situations, the practitioners felt unable to keep up with the expected standards represented by the opinion leaders and ended up alienated of the change process. The repeated use of the same opinion leaders over time exposed them to criticism and envy, saturating their influence over the group.

7.2.3 Relative advantages of the innovation

A key factor that helped to understand the distinct patterns of innovation adoption observed in this study was the degree to which the practitioners perceived the innovations as advantageous to their practice. Participants attributed different positions about the innovations to factors like training, e.g., family doctors with speciality training were more receptive to advanced access; personality traits, e.g., some practitioners had a higher propensity to take risks; and perception of innovation features, e.g., advanced access was seen as more complex and riskier.

The perception of advantages led to more interest in the innovations and facilitated the opinion leaders' role in improving confidence to adopt, as explained earlier. When practitioners perceived advantages in the innovations but wanted to see someone trying first, the opinion leaders' experiences apparently provided enough evidence to prompt adoption trials. They adopt innovations they agreed with because they saw that it was possible.

> *And there's that other one who agrees to change, but he needs to see someone do it first. As an example, one of the teams in my clinic was more resistant to change, they do not have that much competitive profile, do the things of their way, but they said, "they are doing so nice, we are having a lot of absences and waste in consultations, we will try too". (Diana, doctor, opinion leader)*

Conversely, whenever the innovations were not seen as a solution to relevant problems, or their advantages over current practice were not evident, the examples of opinion leaders were received with indifference. A proof of concept only prompted adoption among those already prone to adopt. For those more reluctant, a proof of concept was not enough to provoke behaviour change.

> *I think they do not believe in advanced access so much, and it ends up being a limiter. So, I guess it's not that way of, "Oh, I see, it's possible, then I'll do it". Because I don't think they believe that much. I think they feel they are going to do a job that won't be recognised; I think there are other impediments, other issues. (Bento, doctor, opinion leader)*

However, some practitioners still adopted innovations they did not see as advantageous. In such situations, opinion leaders reinforced peer pressure and a wish to preserve professional status, prompting conforming behaviours as will be explained in the next section. They adopted innovations they disagreed with, to avoid social sanctions.

> *With most people we were able to break a very crystallised view that it had to be like this, it was not possible, it could not go forward, and there was a smaller group of people who did it, but they did very badly, they did because it was bad not to do. (Murilo, doctor, opinion leader)*

Adoption by conformity was more likely to be temporary or superficial, and once the external pressure to adopt ceased to exist, it was common to see teams reverting to a pattern of practice more familiar or less demanding.

> *I would say that perhaps the moment that we tried to integrate the things, the less was the risk of going back. I think that in the Tulip clinic if I had not brought all the access discussion and showed that it was better that way, the moment I left the clinic, it might have retroceded. It continued because people realised that it was better that way. (Murilo, doctor, opinion leader)*

In summary, perceived advantages of the innovations facilitated the influence of opinion leaders in the behaviour change of colleagues because adopting the innovation was congruent with the practitioners' beliefs and therefore felt as voluntary and produced by insight. Conversely, the lesser the perception of advantages, the higher the feeling that the influence was an intrusion, and that behaviour change was externally driven, even though the externalised outcome could also be the adoption.

When practitioners were not convinced of the advantages of innovations, the examples of opinion leaders still played a role in promoting behaviour change through reinforcing pressure to conforming to group norms and avoiding social sanctions. Next, I analyse this process as the social conformity mechanism.

7.3 Social conformity

The second major process by which practitioners responded to the opinion leaders' examples was by conforming to what they saw as new standards of practice. The awareness of practice gaps in comparison with the opinion leaders' innovative practices caused embarrassment in some practitioners, who wanted to show they were able to achieve the same standards. The fact that the opinion leaders were able to do it in challenging work settings weakened arguments about impeditive local barriers. Therefore, practitioners who were still reluctant felt compelled to adopt innovations because they did not have excuses not to do it anymore and did not want to be the odd ones out. Conforming was a tacit and pragmatic decision related to the perception of imminent change and a sense of inadequacy. It was a means of corresponding to their self-image of good professional and preserving status.

> *I do not think it was purely convincing or awareness, "I did not really know the process, and now I'm getting to know", I think it was something forced down the throat. Like, "I cannot make a point of resistance here, and now this is going to happen anyway, I will not be isolated here". (Luiz, nurse, programme designer)*

In such cases, it seems that adoption of innovations was not caused primarily by opinion change but rather by conformity to social norms. Accumulation of successful examples in various contexts and growing support among new adopters created a climate of imminent change, demanding that practitioners take a position about the innovations.

> *First, I'm not entirely sure whether people actually changed their conception or if simply by seeing all the people around them disagreeing with them, they did not want to feel bad about it. (Luiz, nurse, programme designer)*

The support of opinion leaders to the innovations reinforced the peer pressure to adopt. Previous literature has suggested that opinion leaders influence others through establishing, transmitting and changing group assumptions and beliefs about innovations (Greer, 1988), or yet, changing attitudes regarding work processes and goals (Gibbons, 2004). By discussing and demonstrating new behaviours or practices, opinion leaders send a message that nonconforming practices are outdated or inappropriate, so practitioners would tend to comply with these new practices to keep their affiliation with that group (Mittman et al., 1992).

As in the literature, reluctant practitioners in the study setting reportedly chose to comply with innovations because they wanted to avoid being the odd ones out, avoid social sanctions, or preserve affiliation to their social groups.

> *So, the first thing is the change because of shame, "I will not be the one saying no and not doing because all my colleagues with whom I have a good relationship will start to look at me strangely. (Luiz, nurse, programme designer)*

The pressure to conform came not only from peers, but also from patients, that demanded access to the benefits of the innovations, and managers, which translated the innovations into guides, ordinances, or monitoring indicators. These concurrent social forces were summarised by Bento, reflecting on his own experience. Peer pressure would be more influential but indirect, working through a wish to establish and reinforce social identity (chapter 6). Institutional pressure from the top leadership could be diluted in the command chain, while pressure from local practice managers would be more urging because associated with patients' pressure for appointments.

> *Because I think the local climate of pressure has greater power, in my opinion than managerial pressure that comes from above. Pressure from above can be dissipated in many ways; it can get lost in many ways. And the local pressure, from the assistance, from the people, I think it's much more ... I think it ends up having a bigger impact. I think the most direct charge is actually from the people who use the service and probably from local management which will also end up charging because there is a lack of consultations. (Bento, doctor, opinion leader)*

Bento's story, which first illustrated the mechanism of social identity in chapter 6, is used again here to highlight the interrelation between social identity and social conformity. In my analysis, both mechanisms seemed connected in a continuum of normative influence, the first more soft and aligned, and the latter harder and more coercive. To Bento, who had a positive stance on advanced access and aspired to join the group which the opinion leaders represented, the aligned influence of social identity was possibly more relevant. This is also a consistent explanation with the fact that he not only adopted the innovation but became an opinion leader.

In summary, the awareness of practice gaps in comparison with the opinion leaders' innovative practices caused embarrassment and shame in some practitioners, who adopted the innovations because they wanted to live up to their self-image of a good professional, preserve the status within professional groups and the organisation, and avoid feelings of social inadequacy. Adoption was not caused by opinion change in favour of the innovations but rather by conformity to

perceived social norms, within a context of imminent change and growing pressure from peers, patients, and managers.

7.3.1 Climate for change

The pressure to conform to the innovations was more evident in reports of late stages of implementation, after the publication of the first advanced access guidelines or initial training on the nursing protocols. The incorporation of these innovations in institutional norms and the growing number of local experiences in diverse scenarios gradually contributed to a climate of imminent change. Non-adoption became an unpopular choice in terms of professional status. As the examples will show next, this climate for change operated more at the clinic level or in the professional group, rather than as a broad institutional climate.

Some opinion leaders relied on institutional directives for implementing innovations to persuade their colleagues to be actively involved rather than being passive recipients. For example, Douglas managed to persuade his teammates to implement a new training programme in his clinic by using the argument that it would be implemented anyway, so it was better to lead the change than to be left behind by other teams.

> *And sometimes we used the argument that the management was saying that it was important. Not in the Machiavellian sense, but it was true, we used that argument of a thing from above ... Because there was a pressure to implement the medical residency anyway, if it's not here it will be somewhere else, then when I said that the people, "Ok, let's do it". (Douglas, opinion leader)*

Emergent opinion leaders in the clinic level created tension between adopters and non-adopter teams. Both advanced access and the nursing protocols brought observable benefits to the patients, like easier access to medical appointments or prescriptions. The patients talked to each other about such advantages and demanded the same treatment, what highlighted the differences in practice and reinforced external pressure to change. Even resistant professionals started considering a change in practice to comply with new expected standards.

> *I think maybe what has influenced the change was some of the pressure for care itself ... maybe the patients themselves also have that influence of seeing that there are teams from the same clinic working differently, "Why the patient on the other team has access like that" ... (Bento, doctor, opinion leader)*

Sometimes the climate for change was overvalued by the opinion leaders, resulting in cold reactions to their persuasion efforts. That was the case in the

early implementation of the nursing protocols when peer support to the innovation was still shy. The enthusiasm of programme designers and opinion leaders was not enough to create a trend for collective shift in practice.

> *Concerning the institutional climate, I think it contributes, but only the committee members being excited, promoting training and saying 'now everyone is going to do it and it will solve a lot of issues' does not create an institutional climate. You need volume, people instigated, excited to do it. (Luiz, nurse, programme designer)*

Because of the negative reception to the nursing protocols above mentioned, the programme designers informally recruited local opinion leaders in each clinic. The initial resistance was in part the work of opponent opinion leaders; the newly recruited opinion leaders were an attempt of balancing that negative influence with a convincing volume of adoption examples and local support. Ultimately the strategy worked; the climate in the nurses' professional group changed in favour of the protocols, annulling the influence of the opposition leaders.

> *We gathered people together, convincing them one by one and then it took shape to the point we were seen as leaders and those resistant people could no longer resist, or at least they did not succeed in replicating their resistance to the others … What actually happened was that the resistance was reduced to the point that even the most resistant people ended up becoming multipliers of the process. (Luiz, nurse, programme designer)*

In summary, in late stages of implementation, the growing number of adoption experiences in distinct scenarios, incorporation of the innovations in institutional norms, and tension from patients who wanted the perceived benefits of the innovations contributed to a climate of imminent change in which non-adoption became an unpopular choice, constraining even reluctant practitioners to take position and adopt the innovations.

7.3.2 Neutral and opponent opinion leaders

An important point of resistance to both advanced access and the nursing protocols came from senior workers, usually with more experience and time in the organisation than the recruited opinion leaders. Senior and experienced workers, in general, had lower receptivity to change and less empathy with the opinion leaders, who were mostly young and relatively new in the organisation. They had usually occupied distinct positions in the organisation, were more well-connected, and were respected in professional circles. Those senior workers resisted to innovations either passively, e.g., ignoring change directives, or

actively, as opponent opinion leaders. The resistance of senior workers was more observed in early stages of implementation of both innovations when the climate for change was incipient, and there was no consensus on the advantages of the innovations.

> *When we started to discuss the protocol development, there was a lot of resistance in the clinics, especially from workers with a long time in the organisation and who were better known. (Luiz, nurse, programme designer)*

Senior workers were respected for their experience and track record of contribution to the professional group, e.g., participation in associations. Some of them had trained younger colleagues. A sense of hierarchical respect seemed to prevent public confrontation of their opinions. This kind of respect was much more evident among nurses than doctors. The same was observed in previous research on professional networks. Nurses usually have more centralised and hierarchical networks than doctors. It seems that such differences have implications for how information and influence are distributed through the network (West et al., 1999). For example, as observed in the study setting, nurses may draw more credibility from hierarchical positions than doctors do.

> *In that clinic, during the training on the nursing protocols, the practice manager was always sceptical if that would work, or even if it was good… And I did not see many people directly opposing the person, perhaps just because she was a certain leader, who has a lot of time in the organisation, who has already promoted many positive changes to the professional category, then people feel bad to oppose her. (Luiz, nurse, programme designer)*

Senior nurses opposed innovations in great part as a consequence of being attached to current practice. They were trained in the 'old school' and were doing things as it has always been done in that setting. Most had extensive experience but no formal training in primary care. They were not only deep-seated in those patterns of practice, but also entrenched in comfortable work positions and arrangements. Excessive reliance on experience above other knowledge sources and perception of change as threatening to familiar work routines may have limited their ability to consider alternatives to current practice.

In contrast, the supportive opinion leaders were in great part graduates or tutors of new training programmes in primary care, in which they discussed topics like evidence-based practice, multi-professional work, and strategies to improve access. Therefore, there was a contrast between opponent opinion leaders who were older and relied on experience, knowledge of the context, and tradition; and supportive opinion leaders who were younger and more oriented to evidence-based practice and services change.

And one of the barriers that I think was most important in this process is precisely the concentration of older professionals. Somehow, we could not mobilise them for that, for this change, in fact. Professionals who have worked for decades in the same model and who were so deep-seated that they could not see a shift in primary care, either in access or in the scope of primary care, as their function. (Dora, doctor, programme designer)

The institutional recognition obtained by the young opinion leaders was apparently felt by senior workers as disregard for their experience and contribution to the organisation, highlighting the generational gap between innovation supporters and opponents. The resentment among senior workers for the recognition of younger colleagues was similar to the sense of favouritism among potential opinion leaders who were not recognised (chapter 5). This kind of resentful feeling was usually directed to the opinion leaders and managers and was sometimes associated with active resistance to innovations. Douglas, who was a young opinion leader of advanced access, gives the example below of a senior nurse who had been practice manager for years before the events of this study.

She was a nurse for many years, had a way to be a nurse, and was in the clinic long before us. So, she did not make it much explicit, but it was very clear that she had at first a certain resistance, "Who is this new guy there who is coming here, bothering, wanting to change everything that we did?" (Douglas, doctor, opinion leader)

Her resentment was not a surprise if we consider that after all her contribution to the clinic and the organisation she was now seen as outdated and resistant.

Change fatigue

Last, participants associated the lower receptivity with changing of senior workers to previous negative experiences with change processes in the organisation. Because they have seen previous innovation projects fail, they gave less credit to the new efforts, and instead adopted a cautious posture of 'await and see'. This was not an absurd position since the rule in the study setting still was that most projects were discontinued after government changes or abandoned by lack of resources. Some workers who had been through a lot did not see the point of engaging in risky change processes led by young and naïve opinion leaders.

So, in some clinics, these people were able to mobilize their teams for change, but in some others, you had a status quo so installed, especially in clinics that had very old workers that have already gone through many processes of change, either political change, or change of work guidelines, so there it did not happen. (Dora, doctor, programme designer)

Negative attitudes related to experience with unsuccessful change usually reflected on passive resistance to innovations rather than active opposition. The reported situations are consistent with change fatigue, apathy or cynicism, a concept that has been used in management and nursing literature to analyse responses to organisational change. Change fatigue is associated with stress, pessimism about the likelihood of change, and negative feelings towards those responsible for change (Nilsen et al., 2019). It is a common response among health care professionals who had gone through failed changes, and that perceive ongoing changes as overwhelming. Change fatigue and resistance are not the same. Resistance is an active expression of disagreement, while change fatigue is a reaction of withdrawal and stress in the wake of overwhelming change, more similar to burnout (McMillan and Perron, 2013).

In summary, more experienced workers were more likely to express neutral or resistant reactions to innovations, and some functioned as opponent opinion leaders. Some senior workers were less receptive to innovations because of reliance on their experience, background training not fitted to the innovations, or previous negative experiences with change processes. They were less likely to have empathy with the opinion leaders, who were mostly young, new in the organisation, and had different perspectives on their professional role in primary care. They could see the recognition of young opinion leaders as disregard for their experience and contribution to the organisation and become opponent leaders.

Senior workers were usually well-connected and respected among staff because of previous positions or achievements, and were hardly openly confronted; however, the emergence of new opinion leaders in the wake of local change processes sometimes counterbalanced their stiffness, as will be shown in the next section.

7.3.3 Co-interventions and structural constraints

In the setting as in the literature, opinion leaders were frequently used alongside other implementation strategies (Flodgren et al., 2019), as well as within broader organisational changes. For example, advanced access was translated into monitoring standards and induced through cycles of strategic planning. The nursing protocols received political support of the professional council at the state level. Such processes worked as co-interventions contributing to create the climate for change which the opinion leaders relied upon to reinforce peer

pressure. They can be seen as part of the broader institutional and political context.

One such co-intervention was the continuous expansion of primary care clinics and teams which was in course to adapt to new services provision (chapter 3). Structural reforms and the hiring of new workers brought the need for reviewing work processes and relationships in the teams, what in some places created a momentum for change. However, the insufficient rhythm of expansion and the persistence of understaffing and overwork also imposed practical limits to innovation, creating a contradictory context that sometimes annulled the effects of social influence.

> *Maybe if we tried, for example, to make a change of access today, with the teams overloaded with surplus population, one of the colleagues leaving with a health problem … one of the teams without a nurse, it would be a bad institutional moment. We took advantage of a very propitious moment of re-inauguration of the clinic, complete teams, expansion from two to three teams, adequate population. It was also a moment of personal motivation because of the new house, everyone very excited to go back home. (Diana, doctor, opinion leader)*

The mixed interference of structural factors in social influence will be explored next through the story of the Bellevue clinic. This story also integrates elements of the two mechanisms in this refined theory, reason why I positioned it at the end of the chapter.

7.3.3.1 The Bellevue clinic

The Bellevue clinic had an excess of demand with peaks in summer, insufficient physical structure and staff, and a high turnover of doctors. Implementation of advanced access faced a lot of resistance from doctors, who were afraid of being overwhelmed by the excess of patients.

> *In the Bellevue, I had troubles with the doctors. Their argument was that they were already overloaded. If they had to open the e-mail, to increase the number of consultations, it would get very heavy. So, they had a lot of resistance, even though I was showing that it was possible. (Janete, nurse, opinion leader)*

Initial interventions involving opinion leaders, e.g., regional meetings to exchange experiences, had failed. A new strategy was then designed by middle management. Opinion leaders from other clinics, like Murilo and Roberto, were invited to share their experiences in the regular local team meetings. The visiting opinion leaders shared their own experiences, acknowledged the efforts of the local team to provide care under extreme demand pressure, and discussed possible adaptations of the original advanced access model to the capacity of the

local team. The acknowledgement of local barriers and the possibility of implementing a 'soft' version of advanced access reportedly contributed to reducing resistance.

> *And we managed to make a change with the mobilisation of peers, so we took some workers who were from other clinics to go there, make micro-workshops. We tried a lot to adapt to their context. Murilo used it a lot. He asked how they did there, and drawing upon the base context they had, he would try to build something that fit the local reality, so it was not so... It was impossible to move from a totally closed access to advanced access, but maybe something intermediary, so they gradually felt the change. (Dora, doctor, programme designer)*

In parallel, the clinic was undergoing structural reform and expansion and had received some new staff. The feeling of 'new beginning' associated with the new facilities and the associated need to reorganise work routines and roles in the team contributed to creating a momentum for change, in which the practitioners were more receptive to innovations.

> *… In that process back then, of change of access, [the clinic] went from one to two teams, received more professionals, went to a bigger space, then moving to a new place can also mobilise people to change, "New home, let's change too". (Dora, doctor, programme designer)*

The new workers acted as emergent opinion leaders, adopting the innovations in their teams and offering examples and support to the more reluctant colleagues. Their arrival brought a sense of freshness to the team and counterbalanced the weariness and pessimism of the older staff.

> *But this also coincided with a change of part of the team, a new team arrived, so this may have also favoured this process of change, there was a mixed team of old workers and new workers with new motivation, and then it moved forward. … We also had new professionals that ended up mobilising a little, even if the whole team did not want to change, the new ones ended up catalysing this, like local leaders, incorporated that need for change and ended up mobilising their team to change, even the team being old. (Dora, doctor, programme designer)*

New professionals, either at the beginning of a career or moving from another workplace, are in moments of 'boundary transition'; the need to adapt to new groups and organisational environments makes them more open to change as part of their socialization process (Van Maanen and Schein, 1977). This assumption fits with Dora's perception of how new staff were easy to engage in innovation.

The younger professionals are easier to mobilise; they buy the need for change and try to catalyse it in their teams. (Dora, doctor, programme designer)

Within the same context of overcoming resistance to change in the Bellevue, a new practice manager with experience in advanced access, Janete, was placed in the clinic. She came from the group of opinion leaders of the Summerville clinic and was initially received with distrust. The local staff saw the Summerville clinic as an extreme example of advanced access. To overcome this initial impression, the new manager kept part-time clinical work and adopted some features of advanced access in her individual practice. At the same time, she improved the clinic's administrative processes. She gained the trust of the team while providing evidence that advanced access could work there.

So, I've already arrived at the Bellevue to coordinate with this stigma, "A Summerville nurse is coming to make another Summerville here, but we will not accept it." So, I came in facing a little resistance. … So, I talked to the team, "Last week, I did not limit the number of consultations, and even then, I was able to attend my scheduled patients and go to the team meeting". And they started seeing that the way they were doing, very rigid, was not the ideal form, because a lot of patients were not seen and consequently turned against them... They saw that it was feasible and lowered the guard. (Janete, nurse, opinion leader)

The local examples of the new practice manager and the reported experiences of the external opinion leaders highlighted the advantages of the innovation and disarmed some long-standing excuses. The local team was confronted with their practice gaps, which ended up causing embarrassment in the non-adopters, who felt compelled to give the innovation a try.

I think they started to realise that it's possible. And I think some people even were ashamed, for realising that they were accommodated and seen by the example that it was possible. Once someone in the Bellevue clinic said, "What a shame, the nurse X always did that way, and she thought she was overloaded, and now you've arrived, and you manage to see more patients and still do other activities." So, I guess people ended up feeling sometimes embarrassed and sometimes motivated… a discomfort because the colleague manages to do it, and you are not even trying. (Janete, nurse, opinion leader)

With growing pressure from management, local colleagues and external opinion leaders, a trial of advanced access began. But after a while, the local professionals were depleted and reverted to a closed access system. This setback was accounted for lack of organisational support to overcome chronic structural barriers related to overwork, what in turn reduced the availability of the local team to spend extra energy in innovations that could ultimately backfire to them.

I think they were convinced. I think they did not agree, especially the old staff… The Bellevue, after a while, it stepped back a little bit on how much opened the access, because that also brought a great overload. It was an internal reassessment. (Dora, doctor, programme designer)

In summary, structural changes like reforms and staff renewal brought a need for reorganising work routines and roles that boosted social influence by creating a momentum for change. Also, new workers brought to the team a sense of freshness and openness that counterbalanced previous negative experiences of the older staff, facilitating acceptance of innovations. In contrast, the persistence of overwhelming barriers like chronic understaffing and overwork imposed practical limits to innovation, creating a contradictory context that sometimes annulled the effects of social influence. Indeed, structural barriers and the broader primary care scenario were recurrent context elements across the three theories as developed next. See also section 8.2.1 of the discussion chapter.

7.3.3.2 Interaction between structural and professional issues and social influence

The excess of patients and poor structure repeatedly mentioned by participants as a barrier to innovation are indeed common features of primary care systems of LMIC in general (Fairall et al., 2015) and of Brazil in particular (Wattrus et al., 2018). In a Lancet series paper on the Brazilian health system, Victora et al. (2011) highlight among the challenges for health innovation: the uneven distribution of qualified personnel, high turnover, and scarcity of structured careers and consistent salaries between regions aggravating the fixation and turnover problems. These elements were part of the background for the whole innovation process reported in this thesis, interacting with other components of the programme theories like active context factors (Fitzgerald et al., 2002; Dopson et al., 2008).

Most advanced access leaders came from clinics in deprived areas and with excess of patients, like the Summerville, Magnolia and Tulip clinics. The whole opinion leaders' programme was, in a way, a creative response to lack of resources and a need to find purpose and satisfaction in work (section 3.3). The innovative pioneers who managed to implement advanced access in the presence of important local barriers felt particularly confident and motivated by their achievements and the institutional recognition, and acted like true innovation champions (Miech et al., 2018). The strength of their examples worked as

evidence for the other practitioners (section 7.2.1) and ammunition for the organisational leaders (section 7.3.1), facilitating activation of the mechanisms described in this chapter.

On the other hand, the persistence of structural barriers reportedly reduced receptivity to change among the average staff, creating a gap between enthusiastic opinion leaders and overwhelmed peers. The proximity between opinion leaders and managers within a context of stressed institutional relationships and annual strikes contributed to this gap. As a consequence, trust in the opinion leaders, which was much based on perception that they were in the same boat and wanted the collective good (section 6.1.2), was damaged. That scenario favoured the activation of other (more coercive) mechanisms of influence, like the social conformity discussed in this chapter (section 7.1.3).

The impact of the structural issues described and of this gap between opinion leaders and peers were more important for advanced access, which was not supported by the majority of doctors and required changes in teamwork, admin roles, room allocation, etc. Even so, there was an emergent group of young doctors who were egress from new residency programmes in family medicine that indeed saw the advanced access leaders as models of a renewed family medicine practice, committed to the advancement of primary care within the public sector in Brazil (Lermen Junior, 2014; Augusto et al., 2018; Coelho Neto et al., 2019). One example was Bento, whose story was discussed in section 6.3.1. At the time of the events described in this thesis, advanced access was a ground-breaking innovation way beyond the national policy and the experience of most other cities. The advanced access leaders of Florianopolis, while seen by many local peers as radicals, also occupied a vacant space as role models and national leaders of an emergent medical specialty.

With the nursing protocols the sense of collective ownership around the protocols contributed to group cohesion and reduced the impact of in-group differences like those observed with advanced access (see for example section 5.3.1). Indeed, in part because of the hierarchical architecture of nursing professional networks (West et al., 1999), the nursing protocols leaders were also technical experts, associative leaders and managers and some even led the colleagues on strikes. Resistance to the protocols, when present, was more related to particular professional interests, e.g., senior nurses who wanted to preserve established positions and were reluctant to take new clinical tasks (section 7.3.2), or corporatist doctors who saw the new roles of nurses as a threat (Victora et al., 2011).

7.4 Summary of findings and refined theory

The two causal pathways promoting adoption in the initial theory were confirmed, and the mechanisms and contextual determinants were improved in the refined theory. Opinion leaders were important both in reinforcing the confidence of those considering adoption and in reinforcing peer pressure to adopt the innovations, making reluctant practitioners conform. The third pathway of the initial theory, linked to negative outcomes, was integrated to the refined theory as the split side of the two refined mechanisms.

In the first refined mechanism, improved confidence, opinion leaders prompted the adoption of innovations by showing its feasibility and advantages to current practice. Their examples demonstrated how the innovations worked in practice, reducing uncertainty, misunderstandings and expectative of negative consequences, improving the confidence of other practitioners, and encouraging adoption trials. This mechanism was the most consistent thread from theory development to refining and drew upon the initial theoretical framework of the study (innovation diffusion and social cognitive theories).

The opinion leaders reduced uncertainty about innovations when they were perceived as similar in terms of background, role, and work setting, which made their examples relevant; and where the practitioners saw advantages in the innovations, which raised their interest and predisposed to positive assessments and adoption decisions. Conversely, opinion leaders seen by their peers as too distinct did not work as feasible models but generated a sense of unfair comparison that led to neutral or negative attitudes about the innovations.

The second refined mechanism, social conformity, is connected to the social identity mechanism of refined theory 2 (chapter 6). Both were part of a spectrum of normative influence. In conformity, the comparison with opinion leaders highlighted practice gaps and triggered conforming behaviour to avoid social sanctions and preserve status.

The main context factor triggering social conformity was the perception of a climate favourable to change in the local team or professional group, what created pressure to adopt the innovations. Some structural changes, like new staff or structural reforms, reinforced this climate and facilitated the emergence of new opinion leaders. Conversely, the main factors related to negative outcomes (alienation of change or active resistance) were the opposition of natural opinion leaders, mostly senior workers; and the presence of severe structural barriers which annulled the effects of social influence.

Most elements of the refined theory were already suggested in the initial theory, although the causal links were refined. An exception was the role of neutral and opponent opinion leaders, which was a context emerging from the data. The consistency across stages of the evaluation reflects the fact that this theory was developed upon both social theories and stakeholders' views.

Differences between the innovations

There were important differences on how the theories in this chapter played out for advanced access and the nursing protocols. First, the demonstrative role of the opinion leaders' experiences was more relevant to promote adoption of advanced access because the degree of uncertainty, fear and resistance was higher for this innovation. This resistance was in part related to non-addressed problems of excess of patients and poor infrastructure, so most practitioners wanted evidence that it was possible to adopt advanced access in clinics with those problems.

Second, the central place of the practical examples for the advanced access implementation strategy helps to explain why the phenomenon of saturation was only observed with advanced access leaders. The repeated exposure and scrutiny of their experiences made them more subject to criticism and envy. Those who learned to deal with this public exposure and criticism ultimately became managers and organisational leaders, as exemplified by some Summerville doctors and nurses.

Third, the role of senior and experienced professionals as emergent resistant leaders was more observed with the nursing protocols than advanced access. That was not because senior doctors agreed with advanced access but because they were not so central in the network of influence of doctors as the senior nurses were for the nursing group (West et al., 1999).

Last, the way normative influence operated to promote adoption varied according to differences on the perceived advantages and collective acceptance of each innovation. Advanced access was complex and counter-intuitive, and their initial leaders were outliers fuelled by institutional support, so normative influence worked more through coercion than alignment. On the other hand, the nursing protocols were generally seen as an upgrade of nursing practice and a collective achievement, so adopting the protocols was a positive way of reinforcing social identity as a member of the professional group.

7.4.1 Refined theories

Based on the findings shown in this chapter, I developed two refined theories, respectively based on the mechanisms of reduced uncertainty and social conformity. I preserved the structure of the initial theory whenever possible to facilitate comparison, and added emergent causal processes as nested CMO configurations, meaning that they are related to and dependent on the previous causal explanation. The nested CMOC correspond to mechanisms operating within contexts (Westhorp, 2018).

Refined theory 3.1 – Improved confidence

The experience of opinion leaders with innovations demonstrates feasibility, advantages, and risks of adoption. This reduces uncertainty, improves confidence and self-efficacy among practitioners, and projects expected benefits in adopting. Perception of advantages and improved self-efficacy will motivate the intention to adopt. Adoption will result if the practitioners have interest in the innovations but still feel that they need practical information and guidance; and if the opinion leaders are in similar positions and roles in the local system, making their experience relevant and transferable.

Confidence and motivation to adopt are strengthened by observation of successful experience with the innovations in challenging conditions, which reduces the perceived importance of the observer's problems; and by close relationships between opinion leaders and peers, which facilitate exchange and perception of available support.

Confidence and motivation to adopt are weakened by too innovative or enthusiastic opinion leaders, repeated use of the same opinion leaders, or perception of favouritism in their selection, and by persistent structural barriers. Under such circumstances comparison with the opinion leader will be perceived as detrimental or unfair, prompting defensive attitudes and withdrawal of local change, or resentment and active resistance to innovation.

Refined theory 3.2 – Social conformity

The experience of opinion leaders with innovations demonstrates feasibility, advantages, and risks of adoption, promoting adoption trials. Growing adoption and institutional drive promote a climate of imminent change. The support of credible opinion leaders endorses the innovations as practice standards for their

groups. The concourse of demonstrative examples, climate for change, and peer pressure constrain practitioners to take a position about the innovations. Under such circumstances, comparison with the opinion leaders expose practice gaps and weaken excuses of reluctant practitioners, compelling conformity to the innovations to avoid being seen as the odd ones out.

The pressure to conform is reinforced if the opinion leaders demonstrate the innovations in similar and close contexts, e.g., teams within a clinic, what highlights practice gaps; and if they have equivalent roles and positions in the organisation, what triggers competition for status.

Senior workers may be less sensitive to pressure to conform because they rely more on their ability and judgement, may have seen more failed change attempts, and therefore are more prone to wait and see. They may perceive the recognition of the opinion leaders as disregard for their experience and contribution to the organisation, feel resentment or envy, and act as opponent leaders.

A structural change like reforms or new staff may reinforce the climate for change because of the need to reorganise work routines and roles. Practitioners in new roles are more prone to an open attitude to change and may become emergent opinion leaders, balancing the resistance of senior workers. Conversely, persistent structural barriers reinforce defensive attitudes and may annul the effects of social influence.

Chapter 8 Discussion

8.1 Introduction

Many strategies have been developed and tested to address the problem of how to use evidence to improve healthcare. One strategy which has demonstrated effectiveness in trials is the use of opinion leaders, often in conjunction with other interventions. Although a fair amount of work has been made on the mechanisms and effect mediators of social influence among health professionals (see for example: Coleman et al., 1957; Greer, 1988; Mittman et al., 1992; Gabbay and le May, 2004), there is a need for more theoretical development on how specific mechanisms of opinion leadership play out under distinct circumstances (Flodgren et al., 2019). This study contributed to understanding causal processes linking opinion leaders to their effects through analysis of an opinion leaders' programme in a developing primary care setting.

In this chapter, I summarise the key study findings, discuss their meaning within the current knowledge, and suggest implications for future research and practice. The discussion on this chapter builds upon the theory-specific discussion made in chapters 5-7, as well as the methodological discussion of chapter 3. First, I state and analyse key findings produced by cross-analysis of the refined theories in chapter 5-7 and suggest a refined middle-range theory. Then, I outline the strengths and limitations of the study and review how the objectives were addressed and covered in the thesis. Last, I discuss what the study adds to current knowledge, and suggest potential implications for research and practice.

8.2 Principal findings

The results in the previous chapters were presented according to the three programme theories of this study. That structure facilitated the identification of social influence processes related to distinct activities, stages of implementation and outcomes. Here I will discuss selected themes that cut across the three theories. Therefore, they will be presented at a different level. The selected themes articulate content synthesis, comparison with the literature and methodological reflexion.

8.2.1 The institutional context

I found evidence that, in the study setting, the institutional structure and dynamics constrained the functioning of the programme as much as they were changed by programme outcomes. First, structural changes created a facilitative environment for the influence of opinion leaders and structural barriers limited their influence. Second, the collaboration between opinion leaders and managers strengthened the system's capacity to implement innovations but reduced the credibility of individual opinion leaders within their professional groups.

The study setting had a combination of unique and common characteristics (section 3.3.2). The leadership, innovativeness and positive results of the primary care system of Florianópolis put the municipality in a unique position in the Brazilian scenario of primary care. At the same time, the local health system faced constraints similar to other low-resourced settings, like insufficient staff and structure, unequal access to healthcare, and limited capacity to implement and sustain innovations (Victora et al., 2011; Yapa and Bärnighausen, 2018; Stein et al., 2018).

Persistent structural barriers were reportedly associated with low propensity to change and stressed relationships between practitioners and managers, limiting the potential effects of the programme - this situation was illustrated in the Bellevue story (section 7.3.3.1). There was a limit to the extent to which process changes (new access system, support of opinion leaders) could mitigate the effects of an overwhelming imbalance between patients and staff. This was an example of context constraining the choices of the participants of the programme.

Non-adoption of innovations in the presence of overwhelming barriers is not always a failure of the implementation strategy. The same innovation that is desirable for one adopter in one situation may be rejected by another potential adopter in a different situation (Rogers, 2003). That means that resistance to change is not necessarily irrational; instead, it can be the right choice when innovations are potentially harmful from either an individual or systemic point of view. That was one possible explanation for the failure of advanced access implementation in the Bellevue clinic (section 7.3.3.1).

The innovativeness of the institutional setting was part of the conditions of emergence of the programme, which is in itself an administrative innovation to facilitate the implementation of other innovations (Cranley et al., 2017). While advanced access and nursing protocols tackled gaps in access and continuity,

the opinion leaders' strategy was a response to the limited capacity of local management to implement change.

The programme aimed to improve the involvement and commitment of practitioners with change. The consequent collaboration between managers and practitioners, and the gradual migration of opinion leaders to management may have contributed to improve the system's capacity to implement and sustain innovations as a positive spill-off effect of the programme (section 4.2.1). Improvement in local governance is expected to improve primary care performance. In a study with data from all Brazilian municipalities, better health system governance was associated with reduced numbers of amenable deaths (Hone et al., 2017).

The same conditions which contributed to the emergence of the programme might limit its reproducibility in other primary care settings in Brazil. The programme drew upon and contributed to a singular collaboration between opinion leaders and managers who co-produced the innovations (Wehrens, 2014). This singularity should be considered when assessing the generalizability of the findings.

8.2.2 Nature of the opinion leaders

The general profile of the opinion leaders in this study was consistent with my synthesis of the concept in chapter 2: credible individuals, embedded in their groups, who influenced their peers through interpersonal contact and informal interaction. In a detailed analysis, though, the programme was more properly an amalgam of opinion leaders' interventions. The opinion leaders were practitioners and managers, doctors and nurses, formal and informal, supportive and opponent. They usually performed distinct activities and played concurrent roles at the same time, at distinct levels of the system (section 3.3.5). Some characteristics, however, were particularly relevant to activate the mechanisms of the programme, as discussed next.

Most opinion leaders in this study were from the peer type, with a few exceptions of expert opinion leaders among nurses. Peer opinion leaders influence through local credibility and understanding of the context, which in my theories were key triggers of the trust and social identity mechanisms seen in chapter 6. Peer leaders are usually practitioners, in contrast to academic experts; this position in the organisation was core to their role in showing the feasibility of innovations (section 7.2). Although the peer vs expert distinction is frequently mentioned in reviews (Greenhalgh et al., 2005; Flodgren et al., 2019), few empirical studies

have characterised opinion leaders accordingly, or compared the two types in terms of effectiveness. One exception was Wright et al. (2008), which identified improvement in colon cancer staging after a lecture of an expert leader, but no additional effect after academic detailing by a peer leader.

In terms of the integration of the role in the organisation (McCormack et al., 2013), there were both formal and informal leaders. Examples of formal leaders were the members of the nursing committee and informal, clinic-level opinion leaders of advanced access. In the Cochrane review on opinion leaders, a comparison between formal and informal methods was set out but not done because of lack of details on the opinion leaders' activities in most included studies (Flodgren et al., 2019). In this study, informal involvement in implementation was generally seen by the target individuals as a more unselfish contribution, what was associated with trust in the opinion leader. Informal leaders were more able to be seen as peers, in contrast with formal leaders which had their image associated with management and could be seen as turncoats (section 6.2.1). Some authors have suggested that opinion leaders are usually emergent and informal (Borbas et al., 2000; Greenhalgh et al., 2005; Dearing, 2009), act in a casual and non-purposeful way (Katz and Lazarsfeld, 1955; Greenhalgh, 2018), and may not play well in roles that require advocacy or persuasion in ways they would not usually do (Pereles et al., 2003; Verstappen et al., 2004).

Informal and emergent opinion leaders were particularly hard to distinguish from target individuals, and in more than one occasion, I needed to re-classify participants after the interview. Most participants could be classified in more than one role in the programme, even more, if I considered the whole period covered in this study. This observation can be due to a lack of distinctive boundaries of the opinion leader role. Individuals in a social space usually change roles between an influencer and influenced over time, and opinion leadership varies across topics (Katz, 1957). Some authors consider opinion leadership a continuum of influence between individuals within a group (Weimann et al., 2007; Gnambs, 2019). In this study, except a few innovative opinion leaders like Roberto, I found that opinion leaders and non-opinion leaders were not usually different, but rather assumed changing roles in spaces of influence.

8.2.3 Activities vs roles

In the initial description of the programme, I identified three main activities performed by the opinion leaders: production/adaptation of innovations; provision of examples; and informal persuasion/support (chapter 3). The participants

reported anecdotal instances of other activities like formal training and project management, but the three initially identified were more relevant across the two innovations.

Production/adaption of innovations was one of the only opinion leader's activities in trials conducted in primary care settings (Majumdar et al., 2007; Majumdar et al., 2008; McAlister et al., 2009) and developing countries (Althabe et al., 2008). In most trials, multiple activities were used, although the description was usually poor (Flodgren et al., 2019). Provision of examples was not identified as an activity in primary studies, although demonstration of innovations or modelling were frequently postulated as an important role in secondary studies (Davis, 1998; Valente and Pumpuang, 2007; Kronberger and Bakken, 2011; McCormack et al., 2013). Informal persuasion and peer support were mentioned in some qualitative studies (Wadhwa et al., 2005; Keating et al., 2007) and trials (Lomas et al., 1991; Soumerai et al., 1998; Searle et al., 2002).

I found that beyond the activities of the programme or observable actions of the opinion leaders, they played other subjective roles like representing practice standards or changing group norms. The distinction between activities and roles is developed over an example next.

Producing or adapting innovations has been identified in the literature with functions of endorsement and sanctioning of innovations (Greer, 1988; Bhandari et al., 2003; Bloomfield et al., 2005; Majumdar et al., 2007), or with a role of translation, reinvention and sensemaking of innovations (Soumerai et al., 1998; Dopson et al., 2001; Fitzgerald et al., 2002). Consistently, my findings suggest that the contribution of opinion leaders to the production of innovations worked as a positive endorsement and improved the perceived fit of the innovations with the needs and values of their groups.

However, I also found that the same activity, producing innovations, was related to roles like motivating the group or promoting group cohesion around innovations. In such cases, the contribution of the opinion leaders to the innovations was possibly seen by their peers as a proxy of their contribution. Consistently, the group shared the same sense of proud, responsibility and ownership described for the opinion leader. One example of such collective ownership was the mobilisation of nurses against a judicial rule that suspended the use of the nursing protocols, moved by medical associations (section 5.3.1).

Collective ownership in organisations is a single and shared mindset which develops towards an object within a group. It draws on collective identification and a common social identity between the members of a group and is reinforced by collective action towards the owned object. High levels of group cohesion,

shared objectives, mutual support, and an 'us vs them' situation all reinforce collective ownership (Pierce and Jussila, 2009). In the case of the nursing protocols, the external threat which reinforced collective ownership was the lawsuit moved by the medical corporation.

In a second example, the Magnolia story, a similar sense of collective ownership was triggered by a distinct activity of the opinion leaders, which was the discussion of their experience with innovations in regional meetings. The opinion leader, in this case, had a role of keeping the morale of the group high through keeping a positive narrative of success and superaction. He shared with the local team the institutional recognition and, by doing so, was supported by the team in his role and position (section 5.3.3.1).

8.2.4 Perceived similarity

Some characteristics were particularly important to determine the credibility of the opinion leaders (section 6.2.1). The more relevant across the theories was the perception that the opinion leaders were similar to their peers.

Perceived similarity referred to the view of target individuals about how similar the opinion leaders were to themselves. As exemplified in the Summerville story (section 7.2.2.1), this perception could differ between opinion leaders, managers and target individuals. Similarity triggered mechanisms across theories; for example, it facilitated empathy and trust and also modelling and imitation. In my analysis, there were interlocked dimensions of similarity.

The first aspect of similarity is the shared experience of pertaining to the same local groups, or 'being on the same boat', which elicited a sense of empathy, connection, and reciprocity. The opinion leader was 'one of them'. This aspect of similarity relates to the concept of social identity (Brown, 2000b) which derives from group membership (Tajfel and Turner, 1986). Opinion leaders who shared the social identity of their peers were influential because they were seen as trustworthy (section 6.2) (Lewis and Weigert, 1985) and group prototypes (section 6.3) (Brown, 2000a).

The second aspect of similarity is the perception that the opinion leaders had the same work conditions of the target individuals. The opinion leader was 'just like them'. This aspect of similarity was related to the concept of homophily (Miller et al., 2001; Rogers, 2003) Homophily can refer to many aspects (Rogers and Bhowmik, 1970). In this study, the more reported by participants were similar background (doctor/nurse), position in the organisation (practitioner/manager), and work conditions (e.g., number of patients, structure of the clinic).

Homophilous opinion leaders were influential because their experience was transferable what triggered both observational modelling and imitation (Bandura, 1988) and conformity behaviour.

The role of similarity in triggering imitation or competition has been explained by social network research in both medical (Burt, 1987) and other settings (Neal et al., 2011; Aula and Parviainen, 2012). In such perspective, what counts more for the diffusion of adoption behaviour is the similarity of roles within a local network, or the structural equivalence, which is linked to common resources and normative contexts. People in the same roles within a setting would seek to retain their status by adopting the same innovations of potential competitors (competitive isomorphism); or look to others in similar situations for a solution to imitate (mimetic isomorphism) (Neal et al., 2011).

Last, the perception of non-comparability elicited a sense of unfairness that was associated with negative reactions to the programme (section 7.2.2). The dynamics between similarity, identification and distinction is better explored in the following analyses of ordinary practitioners as opinion leaders and opinion leaders who become managers.

Ordinary opinion leaders

Some participants suggested that the identification of 'rank and file' practitioners as opinion leaders could improve the reach of the programme. Ordinary opinion leaders could motivate practitioners who would have trouble to associate themselves with too innovative or enthusiastic leaders. Therefore, recruiting a diverse range of opinion leaders could improve the chances of identification of target individuals with them.

This idea finds resonance on the concept of structural equivalence developed by Burt (1999). This author proposed that innovations are introduced in social groups by cosmopolitan opinion leaders with a strong connection with other groups, or opinion brokers (chapter 2). They first convert a typical group member with whom they have close contact to adopt, after what most subsequent adoption will be triggered by the observation of the advantages that adoption brought to the first converted. This first converted is a more typical group member than the opinion leader, therefore more easily seen by other individuals as equivalent.

This hypothetical dynamic could add to the explanation of how the second wave of opinion leaders of the nursing protocols worked (section 5.2.2). The nursing committee members (cosmopolitan) convinced close acquaintances in each clinic (first converted) to adopt the protocols in their practice. After that, they

'faded into the background to allow contagion by equivalence to have its effects' (Burt, 1999, p.11). If innovation adoption within a group is in part driven by self-comparison with others perceived as equivalent in terms of position and status in the network, identifying and activating ordinary opinion leaders should facilitate influence processes based on equivalence.

Opinion leaders who become managers

Many opinion leaders in the study setting became managers and followed ascendent administrative careers. While the new positions were associated with individual motivation and potential gains to the system in terms of management capacity, as earlier argued, they also created a gap between the opinion leaders and their peers.

In the literature, project managers and opinion leaders are frequently conflated (Locock et al., 2001; McLaren et al., 2002). Some authors have proposed hybrid solutions for this conceptual problem, like an executive/managerial opinion leader type (Locock et al., 2001), or a strategic opinion leader with political and negotiation skills (Fitzgerald et al., 2002). Terminologies apar, in my analysis, opinion leaders with formal management duties worked more as champions then opinion leaders. Champions differ from opinion leaders for working with enthusiasm and persistence to drive implementation, even if assuming the risk of losing credibility (Rogers, 2003; Miech et al., 2018). It is not clear if they function through social influence like opinion leaders, or through managerial processes, control of resources, or status (Flodgren et al., 2019).

Opinion leaders in management, even with continuous support to innovations and social contact with the peers, were not seen as ingroups in the same way (Brown, 2000a). They also had distinctive work conditions which could be seen as privileges by the practitioners, e.g., flexible work times, salary increases or not seeing patients. Such changes in social identity and work conditions might explain why opinion leaders like Bento and Roberto reported a sense of distrust coming from colleagues for their association with management. On the other hand, opinion leaders who moved to management and preserved part-time clinical work sometimes were still seen as 'one of them'. In these findings, as in the literature, it seems that opinion leaders in management preserve social influence only to the extent that the practitioners still perceive them as peers (Greenhalgh, 2018, p.187).

8.2.5 Interpersonal trust

I found evidence that trust is a broad mechanism of social influence, involving distinct actors and generating outcomes at distinct levels. Across the theories, decisions about innovations seemed to be particularly influenced by the trust in others with whom there was a significant relationship.

First, trust in the programme designers facilitated the initial engagement of opinion leaders in the programme and their sustained collaboration with management. Acceptance of the influential role, in this case, could be seen as a reciprocal action or payback for the recognition and appreciation demonstrated by the programme managers. Second, trust in the opinion leaders facilitated the acceptability of innovations. It worked both as a stand-alone mechanism, e.g., trust in the judgement of the opinion leaders leading to more openness to innovations; and as a co-mechanism, e.g., trust facilitating the establishment of empathy and perception of a shared social identity with the opinion leaders (chapter 6).

There are diverse types of trust, e.g., propensity to trust others, based on early life experiences; or system trust, like in monetary and political systems. In this study I referred to interpersonal trust, which is the willingness to act based on the words, actions, and decisions of others which the trusting party perceives as trustworthy, and therefore expects will cause no harm (Mcallister, 1995). Personal trust and system trust rest on different bases; personal trust usually involves an emotional bond or otherwise significant relationship between individuals. When we perceive that others' actions imply that they trust us, we become prone to reciprocate by trusting in them more (Lewis and Weigert, 1985).

Informal connectedness facilitates reciprocal actions because of affective ties, intimacy and empathy. Friendship and empathy are foundations for trust, which in turn prompts reciprocal actions. Trust seems to cause change by activating reciprocal behaviours (Lewis and Weigert, 1985). The idea of reciprocity is a correlate of cooperative behaviour. Trust is associated with a sense of social obligation and reciprocity that reflects in collaboration between the parties, and a wish to preserve that relationship.

One example of a reciprocal loop was the cascade effects of the institutional recognition of opinion leaders in their collaboration with managers. Institutional recognition led opinion leaders to support innovations as payback to the programme designers and organisation; their innovative and collaborative behaviour generated invitations to projects that matched their interest or to management positions; the new opportunities reinforced their commitment and collaboration; and so on.

Without a sense of connection, empathy or social obligation, the endorsement, advice or examples of opinion leaders were unlikely to affect their peers. For example, when Roberto perceived that the Summerville examples of advanced access were not working with their colleagues, he changed his strategy of influence from highlighting advantages and feasibility of the innovation to establishing connection and empathy with the colleagues.

8.2.6 Normative influence

In my findings, the wish to feel socially adjusted triggered distinct behaviours in distinct stages of the innovation process. At the beginning of implementation, the innovations were seen as deviant practice, and the first adopters were innovative practitioners who wanted to stand out from the crowd (chapter 5), so the social adjustment was linked to keeping usual practice. Over time, social influence and other implementation strategies promoted growing adoption and support, which in turn created peer pressure and a climate of imminent change associated with the innovations, so more practitioners wanted to join the new trend (chapter 6). At a certain point, the innovations were seen as a mainstream practice and adopting turned out to be the conforming behaviour which provided a sense of social adjustment, so even those practitioners who did not agree with the innovation principles were led to change to some extent (chapter 7).

Opinion leaders mediated these processes of social conformity by influencing the perception of group norms. The role of opinion leaders in influencing the knowledge, attitudes, and social norms of their groups is acknowledged in the literature (Grimshaw et al., 2012). In the social influence perspective, they affect the individual practice of colleagues by changing group norms and reinforcing peer pressure to conform (Mittman et al., 1992). Their own ability to influence group norms is based on conformity to local social norms (Rogers, 2003). Such social norms refer to tacit rules about 'the way we do things around here' in a setting, and express values and beliefs about accepted ways of practising. The practice of the opinion leaders express these standards of practice, sending a message to others in their groups that those are now the accepted behaviours (Mittman et al., 1992).

I found support for a continuum of normative influence, ranging from a soft type, which reinforced social identity and belongingness, to a hard type, which brought to the line reluctant practitioners through peer pressure. These two processes roughly correspond to the mechanisms of social identity and social conformity. One programme designer suggested that the difference between soft and hard

normative influence would reside in the degree of congruence between the beliefs of the target individual and the innovation, and consequently, of alignment with the influence received. Change by aligned influence was perceived as self-determined, engaged and sustained, while coercive change was felt as externally imposed, reluctant and superficial. One example of superficial, non-aligned change was the transitory adoption of advanced access in the Bellevue clinic (section 7.3.3.1).

To understand aligned and non-aligned processes of normative influence, I used Kelman's (1961) framework of opinion change. He identified three distinct responses to an influential agent: internalisation, identification, and compliance. Internalisation is when an individual accepts the influence of the influential agent and assumes a new behaviour because it is congruent with their values and beliefs, what in turn makes adoption intrinsically satisfying. In identification, the influence is accepted to establish or maintain a relationship with a significant individual or group (significant other). The behaviour change is maintained while the influential agent is seen as important or credible. In compliance, the reason for accepting the influence and changing behaviour is the wish to obtaining a favourable reaction from a significant other or avoiding negative reactions. This type of behaviour change only holds while monitored; otherwise, it is reversed.

Identification is closely related to the social identity mechanism in my theory. It was possibly one process mediating Bento's adoption of advanced access, as part of his socialisation as a new doctor (section 6.3.1). Internalisation is more clearly related to the intrinsically satisfying engagement of innovative opinion leaders in implementation (section 5.2.1). However, internalisation is not always a rational decision (Kelman, 1961), and it may also play a role in soft normative influence. Practitioners who want to belong in a group may introject the group values and perceive the decision to adopt innovations as coming from themselves. They would adopt innovations to enhance their affiliation with the group while perceiving those innovations as congruent with their own beliefs.

The distinction between internalisation and compliance is related to the distinction between social identity and conformity in my theory. Adoption of innovations by conformity, or compliance, is a way of preserving group affiliation and avoiding social sanctions. Change is less sustained because it relies on external monitoring. It may also be more important in late stages of implementation when imminent change requires that even reluctant practitioners take a position about the innovations. If a few other people are doing so, then there is less pressure to follow a given action (Brown, 2000a). Therefore, conformity may only operate once a critical mass of influence or a change threshold is reached, as postulated in the diffusion of innovations theory (Valente, 1996; Rogers, 2003).

8.2.7 Multi-level and negative effects of mobilising opinion leaders

One key finding of this study was the identification that the initial recognition and engagement of opinion leaders is more than a preliminary stage of the programme. Most literature about opinion leaders focus on how their persuading activities affect target individuals, with little attention to how processes like institutional recognition, collaboration with managers or participation in production of innovations affect the local system and the opinion leaders themselves. In my analysis of programme theory 1 (chapter 5), I demonstrated that the initial mobilisation of opinion leaders – comprehending the processes of identifying, acknowledging and recruiting opinion leaders to support innovation has specific mechanisms and outcomes. This process, that I called 'activation' of opinion leaders, is recapitulated here in box 8.1.

Box 8-1 Activation of opinion leaders in Florianópolis

The recognition of opinion leaders helped to bridge managers and practitioners, instigated a management career for some opinion leaders, and enhanced the institutional capacity to develop, implement and sustain innovations, what worked as a system-level outcome. This outcome reinforced the conditions or emergence of the programme, enabling the identification and emergence of new opinion leaders. At the same time, lack of recognition of natural opinion leaders, e.g., senior and more experienced workers, and the repeated use of the same opinion leaders over time elicited negative attitudes in part of the staff. Opinion leaders who were formally involved in implementation, e.g., by taking management posts were motivated by the recognition and career progression, but also saw competing demands reduce their ability to lead on specific innovations. Involvement with management also affected social identity by changing the group of reference of the opinion leaders what ultimately reduced their similarity with peers. Despite the gains in status for the opinion leaders and management capacity for the organisation, over time, individual opinion leaders had their influence reduced. The innovations, however, continued to thrive, as reported in institutional documents and media news.

The first consideration from this account is that the recognition of opinion leaders affected the local system beyond the trajectory of a specific innovation. It has been suggested that opinion leaders are motivated by the perceived benefits of social advantages accruing from their influential roles (Burt, 1999). The social

advantages coming from institutional recognition – including perspectives of career progress - would improve job satisfaction and motivation in work. Job satisfaction has been related to positive feelings towards the organisation, commitment to work, collaboration with peers and managers, and involvement in local improvement, a set of proactive behaviours that have been defined as organisational citizenship behaviour (Organ, 2018). This concept refers to informal behaviours which go beyond the strict work role, including, for example, supporting peers and supervisors, innovating, volunteering, running the extra mile. Organisational citizenship behaviour was demonstrated to mediate the relationship between feedback and innovation implementation in a study in Spanish hospitals (Haider et al., 2017).

A second consideration is that the institutional recognition and involvement in management have a potentially negative impact on the relationships between opinion leaders and their peers. The same enthusiasm and intrinsic motivation for innovation that turned opinion leaders into a resource for implementation also differentiated them too much from their peers. Enthusiasm for innovations raised concerns about objectivity and hidden agendas (chapter 6), innovativeness was seen as a deviation from group standards (chapter 7), and association with management, a change of sides. The conflation of opinion leadership and administrative leadership has been highlighted as a common mistake when attempting to operationalise the concept of opinion leadership in interventions (Dearing, 2009). We can easily mistake authentic informal opinion leaders for positional authorities (Collins et al., 2000).

Explaining negative effects is an important aspect of realist evaluations and should be a major concern of implementation research for the following reasons. First, some extent of avoidance, rejection, discontinuance, and re-invention are expected components of the innovation process (Klein and Sorra, 1996; Rogers, 2003). Second, analysing negative outcomes helps to expand the explanatory capacity of research, overcoming a pro-innovation bias which limits explanation to positive outcomes and cases of success (Rogers, 2003). And third, realist evaluations seek to explain outcomes patterns (Pawson, 2006b), which will always include expected and unexpected fortunes and failures.

Last, the non-influence of opinion leaders can be a result of the choice of the wrong opinion leaders, e.g. positional authorities, change agents, or champions as opinion leaders (Locock et al., 2001; McLaren et al., 2002; Rogers, 2003). Choice of controversial figures or perception that the opinion leaders are disrespectful can reduce the motivation of other practitioners to participate in innovation (Flottorp et al., 1998; Bhandari et al., 2003).

In summary, once opinion leaders are activated, multiple causal streams are triggered, some reinforcing and some annulling each other. The net effect will be influenced by a range of context variations, and therefore inherently hard to predict. The concurrent causal processes here described could explain why the effects of opinion leaders are so distinct and hard to predict across settings. They also exemplify a key tenet of the realist explanation, which is the open and complex nature of social programmes.

8.2.8 A realist programme

Opinion leaders' interventions have a unique combination of elements that are consistent with key realist principles. By applying realist principles to an empirical inquiry of an opinion leaders programme, I showed that the realist approach is well fitted to investigate the nature of opinion leadership.

First, opinion leaders are highly contingent to the context, in particular to variations of i) the structure, culture and climate of the organisation (e.g. management styles, structural deficiencies); ii) the actors and their relationships (e.g. relationships between managers and practitioners, informal networks); iii) how the innovation is perceived by opinion leaders and target individuals (e.g. relative advantages and complexity); and iv) how the opinion leaders are seen by their peers (e.g. similarity).

Second, opinion leaders are change agency interventions (McCormack et al., 2013) which rely on informal, self-directed and emergent actions of the actors that embody the intervention. It has been proposed that opinion leaders may be more effective exactly when they lead the influence processes according to their preferences and usual networks (Lomas et al., 1991; Verstappen et al., 2004). That adds an inherent component of variation to the intervention. Some authors have talked about an attribution problem inherent to the research on opinion leadership. It is hard to distinguish the extent to which any observed effects can be attributed to the opinion leaders, other elements of the context, and concurrent interventions. In fact, maybe such differentiation is not at all possible, or desirable (Greenhalgh et al., 2005, p.125; Greenhalgh, 2018, p.187). Also, as described in the Bellevue story, the effects of opinion leaders' interventions are limited by structural factors. Therefore, the study of opinion leaders requires an epistemological and methodological approach that integrates structure and agency in the analysis.

Third, as argued in the previous section, opinion leaders' interventions mobilise nested generative causal processes. I found evidence for: i) concurrent mechanisms affecting each other, e.g., trust and social identity; ii) context elements interacting in configurations, e.g., the context triggering social conformity; iii) recurrent outcomes changing the initial conditions of the programme, e.g., collaboration between opinion leaders and managers; iv) processes at one level of the system generating outcomes at different levels, e.g., climate of change triggering individual conformity. Realist evaluation offers an approach for the study of such complexity through the operationalisation of the concepts of open systems, layered reality and generative causation into an iterative approach for empirical enquiry (Westhorp, 2012; Pawson, 2013).

8.3 Refined middle-range theory

To abstract the middle-range theory, I cross-analysed the refined individual theories to identify higher-level causal processes. Some refined mechanisms were more related to distinct moments of implementation, e.g., ownership seems more important in initial stages, while conformity is more relevant in late stages. However, implementation occurred in distinct paces across the clinics, so the mechanisms were more concurrent than sequential, e.g., while some clinics were discussing the feasibility of advanced access, others were sharing their experiences with other teams. The same opinion leaders mobilised distinct mechanisms, e.g., inspiring some colleagues and coercing others, although probably not all at the same time or with the same target individual.

I found that the causal processes explaining the programme: i) crossed system levels; ii) influenced multiple actors concurrently; iii) were recurrent, i.e., changed their initial conditions; and iv) produced secondary, downstream outcomes. The middle-range theory adds complexity to the refined theories in terms of dimensions like actors and system levels (beyond the CMO elements), and recurrent causal links within and across individual theories.

The pitfall of synthesising a middle-range theory is that it is supposed to be a higher-level synthesis, but in the end, it may indeed look rather simplistic. To illustrate this conundrum, I will use the example of McCormack et al. (2013)'s realist review of change agency strategies, which was repeatedly referenced throughout this thesis. The authors set out the task of reviewing the literature on change agency, to determine how change agency interventions operate in different contexts and with what effects. The task is complex by the contested nature and diversity of the literature in the field, as I reviewed in chapter 1. The

plainer version of the middle range-theory produced was as simple as this: 'change agents who are adequately supported and resourced (context) and who model the roles and practices they espouse (mechanism), have greater potential to achieve evidence-informed healthcare (outcome)'. Zooming into the context, for adequately supported and resourced the authors meant elements such as local leadership and supportive culture, the embeddedness of the change agent, and integration of the change agent role in the organisation. Supportive culture, in turn, referred to removing contextual and resources constraints to the use of evidence, what reminds of the extensive literature on barriers and facilitators to evidence-based practice... And so on.

Therefore, the apparent simplification is, in fact, the occultation of subprocesses, which in this study were detailed in the refined theories and the discussion made in this chapter. These subprocesses are mechanisms within mechanisms, or mechanisms within contexts (Westhorp, 2018). They illustrate the open, nested and multi-layered nature of the programme causal processes. Therefore, the broad statements of the middle-range theory should be read under the light of the discussion made throughout this thesis on specific elements and causal processes.

A middle-range theory is a general proposition which, although built from empirical observations, is abstract enough to have applicability across distinct settings. It is an operational solution to allow empirical research in social sciences (Merton, 1968a). Therefore, although still an explanation of the Florianópolis' programme, the refined middle-range theory is also a proposition about how opinion leaders' interventions work. I am aware that any claims of generalizability of these findings should be secondary to careful consideration of the granular contextual conditions discussed in previous sections. All that said, the refined middle-range theory is as follows.

Refined middle-range theory

Recognising opinion leaders improve their satisfaction and motivation in work and facilitates collaboration with peers and managers. Involving them in the local adaption of innovations improves ownership and promotes buy-in and active support to implementation. Collaboration between opinion leaders and management improves the chances of career progress to opinion leaders and enhances the local capacity to implement and sustain innovations. Work satisfaction, ownership of innovations and collaboration with management are enabled in the presence of interest of the opinion leader in the innovation and the

assigned role, organisational support, and trust between opinion leaders and managers.

If the opinion leaders are credible, accessible and closely related to their peers, their involvement in implementation endorses innovations, promotes an indirect sense of participation and collective ownership, and facilitates trust in the innovations. Their endorsement facilitates the perception of innovations as practice standards for their groups. Collective ownership, trust and positive endorsement of innovations are enabled by the perception that the opinion leaders are closely related and equivalent to their peers. Proximity elicits a sense of social obligation, empathy, trust and reciprocal actions, while equivalence makes the experiences transferable and comparable, enabling imitation or competition.

Opinion leaders then facilitate innovation adoption through interlocked pathways. Some practitioners adopt innovations to feel part of a group or process that the opinion leader represents. Others conform to innovations to avoid being seen out of group standards expressed by the opinion leaders. Practitioners may adopt innovations because of who is asking them to do so; they trust that the opinion leaders are choosing the best course of action. And they can adopt innovations because the opinion leaders showed them that it is possible, and they want to enjoy the same projected benefits.

The collaboration and association of opinion leaders with management can reduce their equivalence and proximity to peers, stress previous relationships, change their social identity or personal interests. Such alienation from the peers may reduce their ability to build trust and consensus, offer standards for social comparison, or serve as models for new practices. They may have their social influence reduced even if leading administrative change. Choice of some opinion leaders can generate resentment in others, creating opponent leaders; comparison with too strong leaders can lead to change fatigue, and perception of favouritism can reduce the overall trust in innovations.

There are other aspects that I could have explored in the discussion or developed as elements of the middle-range theory. Likewise, analysing my data through other theoretical frameworks, e.g. sensemaking theory (Weick et al., 2005), would likely elicit different interpretations. However, I did what was feasible and appropriate for my objectives and research questions and within the resources available. I prioritised those aspects of the programme that seemed more relevant according to my interpretation of the data. Outstanding issues may represent an agenda for future research. Ultimately, this is a study of a social

programme, which is part of an open social system in constant change. Any explanation will always be incomplete and partial.

8.4 Strengths and limitations

This study has a balance of strengths and limitations which I discuss next. In general, the same design choices and practical aspects which defined strengths also brought limitations to the study.

Strengths

First, I shed light on a long-standing knowledge gap of the research on opinion leaders. I generated theoretical hypotheses about how opinion leaders' interventions work, and what explains the observed variation and unpredictability of their effects. By using a realist approach, I was able to theorise about the interplay between mechanisms of change and contextual influences, and their relation to a range of outcome patterns. Realist evaluations, if conducted with rigour, can produce findings useful beyond the context of the specific study, based on the portable nature of the generative mechanisms, and in the integration of context into the analysis.

Second, I focused on a less researched aspect of opinion leadership, which is the activation of opinion leaders as an intervention. In the literature, as in my findings, the commitment and buy-in of opinion leaders to innovations seems an important determinant of successful implementation. I analysed how the initial recognition of opinion leaders and the way they are involved in implementation generate their specific outcome patterns across system levels.

Third, this study was conducted in a setting which is sub represented in opinion leaders' research. Most opinion leaders' studies in healthcare were conducted in experimental conditions, hospital settings, and developed countries. This study was conducted in a real-world primary care system of a developing country. Opinion leaders are an intervention highly sensitive to the context, as I demonstrated in this study. It is unlikely that findings from one setting would be immediately applied to unrelated settings. Primary care is distinct from hospital settings in aspects like professional networks and hierarchies, work processes, characteristics of the patients and management structures. Health systems in developing countries differ from developed settings in terms of resources, problems and priorities. Therefore, this study adds to the knowledge by showing how opinion leaders could work in a primary care setting of a developing country.

Fourth, this was one of the first realist evaluations conducted in a Brazilian health setting by a native researcher. The use of realist evaluation in health systems research is growing, and there is currently a thriving global community of researchers which connects through the RAMESES mailing list (The RAMESES Projects, 2020) and realist conferences. The expertise that I acquired with this study could help to develop this area of research in Brazil and to connect researchers from Brazil and other countries.

Limitations

First, the study was based on retrospective, one-off interviews. The findings would possibly have been different if I had been able to conduct follow-up interviews as initially planned, or if it was designed as a prospective study. The reliance on self-reported recall data was deemed as one weakness of diffusion research, potentially reducing the accuracy of the data. However, such accuracy can be improved if the innovations are salient to the participants (Rogers, 2003). This study had a high participation rate (62% of the invited accepted), and most participants were still involved with the innovations at the time of data collection. These observations may denote interest in the study topic. I attempted to minimise the lack of follow-up interviews like follows: i) interviewing the key stakeholders who participated in the stakeholder consultation; ii) using progressively purposeful questioning within each interview (Manzano, 2016); and iii) investigating topics across interviews/participants, e.g. refining a topic elicited by one participant in other's interview (chapter 3).

Second, I relied on the perspectives of programme designers and opinion leaders. Only one out of 18 participants were defined as a target individual. Programme designers and opinion leaders most likely had an interest in the programme, to which they dedicated thoughts and actions. Therefore, reports here included may be marked by a social desirability bias. However, most participants played diverse roles in the programme over time, e.g., Bento's story is about its passage from target individual to opinion leader (section 6.3.1). Also, by the nature of the concept, individuals are not opinion leaders or target individuals, but they function more like one or the other concerning specific topics and in specific relationships and moments. Therefore, it is possible that to some extent, I have also captured points of view similar to those of the target individuals.

Third, I could not obtain administrative data or other objective sources to assess outcome patterns at the team or clinic level. Realist evaluations work by explaining outcome patterns, which should, therefore, be conceptualised and,

ideally, monitored (Pawson, 2013, p.21). Therefore, this is an important limitation. For example, I could not compare instances where the opinion leaders supposedly worked and not worked. Instead, I relied on the participants' reports to define outcomes. I tried to overcome this limitation by prioritising reports in which there were observed outcomes, i.e., when the participant reported an objective change related to the opinion leaders' action.

Fourth, my stance on the programme as an ex-insider carried a risk of lack of exemption on the interpretation of the findings. In chapter 3, I discussed some safeguards that I adopted to minimise such risks (section 3.9.2). I would argue that my interested stance and deep knowledge of the programme also brought advantages to this study. I was able to maximise the engagement of former colleagues in the stakeholder consultation and interviews; to select good informants for the interviews based on knowledge of their profile and trajectories; to develop programme theories with a good fit to the observed events; to explore emerging themes and include opportune prompts in the interviews, and to fill gaps in data analysis with my memory of events and insights.

8.5 Revisiting the research objectives

Next, I briefly reflect on the extent to which I answered to the study objectives and research questions. To which objective, I summarise what I set out to do, what I did, what I found out, and where I covered it in the thesis.

Objective 1. To reconstruct, from the stakeholders' views, the opinion leaders' programme in Florianópolis.

I set out describing the nature of the opinion leaders programme – who were the opinion leaders, how they were engaged and which roles they played in the implementation of advanced access and nursing protocols. I reconstructed the programme based on documents, an informal stakeholder consultation, and my memory from the time I worked as a manager in the setting. The conception of the programme was gradually improved through the evaluation, and a critic analysis of its nature was included as a discussion point. I found out that, beyond the activities in which they were engaged (section 3.3.5), they played important subjective roles, e.g., building trust or reinforcing peer pressure. One key finding was the relevance of the collaboration between opinion leaders and managers to the generation of positive and negative outcomes, as discussed earlier in this chapter.

The initial description of the programme is in section 3.3.5. A discussion on the nature of the programme based on the findings and the literature was made earlier in this chapter (8.2.2).

Objective 2. To identify candidate theories about how opinion leaders promote innovation in healthcare settings.

I set out identifying candidate theories about how opinion leaders influence their peers, drawing on a range of literature sources – social theories, models of social influence, insights from empirical studies. Key social theories which underpinned opinion leaders' studies were diffusion of innovations, social cognitive and social influence theories. I explored the literature guided by the description of the programme and developed three candidate theories which guided the subsequent inquiry. The candidate theories sought to explain the roles of opinion leaders in different stages of implementation, leading to a chain of outcomes (initial buy-in, readiness to change, adoption).

The literature review about opinion leaders is in chapters 2 and 4 - general ideas about concept, attributes, types, effects etc. in chapter 2, and tentative causal processes explaining the programme in chapter 4.

Objective 3. To develop, test, and refine, programme theories about the roles that opinion leaders played in Florianópolis.

I set out developing programme theories based on literature and informal consultation, then testing and refining these theories based on interviews and literature. The programme theory was disaggregated in three theories referring to distinct roles of the opinion leaders across the implementation process. I operationalised the study in two stages, merging testing and refining in a single iterative stage. The theory development consumed more time than planned, in part for problems with the ethics approval (section 3.8). One key finding of the theory development was the identification of the initial recognition of opinion leaders as a key component of the programme, which fed the development of programme theory 1. During the testing and refining of this theory, I found evidence for nested, divergent and recurrent causal processes, which I discussed in sections 8.2.6 and 8.3 earlier in this chapter.

The processes of developing, testing and refining the theories were described in sections 3.6 and 3.7. The initial theories are in chapter 4. The refined theories and supporting evidence are in chapters 5-7.

Objective 4. To synthesise a refined middle-range theory about the roles of opinion leaders in primary care innovation

I set out integrating the refined theories of this study into a middle-range theory, built upon empirical data but on a level of abstraction sufficient to allow its testing beyond this study's setting. I made a narrative synthesis of crossing elements of the three refined theories into more abstract propositions. The analysis that led to the middle-range theory was not based on a single social theory, model or framework. I found that a combination of theoretical perspectives better explained my findings. The middle-range theory was an operational solution to combine discrepant theoretical perspectives into a coherent set of testable propositions. I also suggested some considerations for future research and practice based on this synthesis.

The synthesis of crossing findings which fed into the middle-range theory was discussed in section 8.2, and the middle-range theory is in section 8.3.

8.6 Meaning of the study

This study addresses a recognised knowledge gap about one implementation strategy with demonstrated effectiveness in promoting change in health settings. A better understanding of effect mediators could inform the development and evaluation of more effective interventions. My findings suggest causal processes that might contribute to explaining why the outcomes of opinion leaders' interventions are so diverse and unpredictable. Some outputs of this study include the clarification of the processes involved in the initial activation of opinion leaders; a demonstration of the role of trust and perceived similarity as broader determinants of opinion leadership; and the identification of new avenues for investigation, like the role of opinion leaders within spaces of influence. Next, I will outline considerations for future research and practice and summarise key messages of the study.

8.6.1 Considerations for future research and practice

First, the findings of this study are new tentative theories, as in all realist evaluations. Therefore, they may contribute to the cumulation of knowledge to the extent that they can be integrated into new studies of similar families of programmes. Hopefully, these findings represent a new starting point, a little more downstream, to understanding the variable effects of opinion leaders in

healthcare settings. If so, future process evaluations aligned to trials, for example, should consider exploring and testing some hypotheses generated in this study.

A more immediate application would be a consultation exercise involving the stakeholders of Florianopolis to develop recommendations for improving the programme in the original setting of the study. This study was designed from the onset with this intention, what is reflected in the involvement of intended evaluation users in the stakeholders' consultation. My familiarity with the local network, which in certain moments was a liability in this study (section 3.9.2), might be an advantage to adapt the findings to local audiences and capture the interest of potential evaluation users.

Second, some topics raised in this study might deserve future investigation. In previous sections I mentioned the role of ordinary opinion leaders and the relationship between opinion leaders and managers. One outstanding topic is the idea of spaces of influence which emerged from the description of established groups within the organisation, in particular the Summerville clinic and the family medicine residency programme (section 6.3.2). The close interaction, mutual support and friendship relationships between members of these groups contributed to convergent practices and a sense of shared social identity. These groups worked as 'cellars' for advanced access opinion leaders.

The idea of spaces of influence is consistent with some previous research. Katz (1957) described opinion leaders as both disseminators and recipients of influence. Weimann (1994, p.236) showed that opinion leaders have more communication with other opinion leaders than with non-opinion leaders. Opinion leadership seems to be a continuum of influence within groups (Weimann et al., 2007; Gnambs, 2019), and decisions about innovations among practitioners are influenced by collective and tacit guidelines (Gabbay and le May, 2004). These remarks suggest that other concepts like knowledge exchange or communities of practice (Brown and Duguid, 1991; Ranmuthugala et al., 2011) may explain nuances of social influence among practitioners that are not captured by the studies of opinion leadership.

I discarded pursuing this thread further because, despite my perception of its relevance, I had insufficient data to zoom into the processes of exchange or roles within groups. Instead, I make a point here for future research. Possible research questions are the extent to which opinion leadership is still relevant within such groups, or other metaphors are more suited to its study, e.g., communities of practice; and the extent to which it is possible to facilitate influence processes in such social spaces rather than activating individual opinion leaders.

Third, future research should consider the use of multiple theoretical perspectives to understand the multidimensionality of opinion leadership (Greenhalgh et al., 2004; Nilsen, 2015). This consideration is based on two key findings (see next section): i) the multilevel causal pathways unleashed by the recognition of opinion leaders (section 8.2.7); ii) the insufficiency of single social theories to explain the diverse mechanisms that I identified. Previous studies have attempted to combine perspectives in the study of opinion leaders, for example, i) the combination of social network, diffusion of innovations and social capital theories used by Burt (1999) to analyse the cross-border roles of opinion leaders; or ii) the distinct interpretations of the Medical Innovation study, which suggested distinct mechanisms of influence (Coleman et al., 1957; Burt, 1987; Iyengar et al., 2011). A similar point has been made by Greenhalgh et al. (2005, p.125), based on the observation that qualitative studies usually showed a more important role for opinion leaders than the trials. They suggested that such distinct results are not incommensurable, but rather reflect the complex nature of the intervention; and advocated for the use of methods that analysed opinion leadership as embedded in inextricable relations with the context.

Fourth, more attention should be paid to the analysis of negative outcomes in future evaluations and interventions. The processes involved in negative outcomes should not be simplified as the flip side of causal processes explaining positive outcomes. Much of the insight in this study came from the analysis of specific causal processes explaining negative effects, e.g., perception of favouritism and resentment, or the perception of unfairness and alienation. The analysis of negative outcomes is integral to realist evaluation, which concerns about the outcome patterns of social programmes; and it can improve the understanding about why programmes do not work as intended, thus advancing implementation science.

8.6.2 Key messages and conclusion

This study contributed to the theoretical knowledge about opinion leaders by investigating an emerging opinion leaders' intervention in a real-world primary care setting of a developing country. I addressed aspects of opinion leadership less explored in previous research, like the initial activation of opinion leaders or the mechanisms of negative outcomes. The use of realist evaluation allowed the examination of the causal processes related to distinct outcome patterns and confirmed the fit of realist inquiry to the study of change agency strategies. The focus on generative mechanisms, portable across interventions, and the detailed description of context make the study findings potentially useful beyond a specific

setting. Decision-makers from other settings should use this detailed information to assess the extent to which findings of this study could inform decisions in their specific conditions. Hopefully this study may contribute to explaining some of the unpredicted or contradictory effects of opinion leaders' interventions.

The following key messages summarise the study findings:

1. No established social theories explain the whole of the causal processes underpinning opinion leadership. This assumption is consistent with previous literature that conceives opinion leadership as a multidimensional and contingent phenomenon which roles span beyond the borders of their social groups. A combination of perspectives ranging from social psychology to organisational theory was needed to analyse the findings of this study.

2. Opinion leaders' interventions should be reconceptualised to include a component related to the identification, acknowledgment, recruitment and initial motivation of opinion leaders within change processes. This mobilisation or activation of opinion leaders seems to have specific determinants, mechanisms and outcomes, which in turn interact with other causal processes that explain the influence of opinion leaders on the behaviour of peers. For example, improved management capacity to implement innovations might be accompanied by a reduction of the individual influence of the opinion leaders.

3. Opinion leadership is contingent on context configurations, or dynamic groups of interrelated factors. Instead of individual relationships between context, mechanism and outcome elements, the programme was better explained by clusters of contexts, mechanisms and outcomes working together. One example of context configuration is the sum of factors that seem to trigger the conformity mechanism: complex innovation, reluctant practitioners, peer pressure, closely related opinion leaders and a climate of imminent change.

4. The perceived similarity between opinion leaders and peers is a key determinant of the opinion leaders' influence. Two relevant aspects of similarity in this study were equivalence of work position and setting (practitioners vs managers, clinics of same size) and personal proximity (friends or teammates). Identifying ordinary professionals as opinion leaders may facilitate this self-association among the average practitioners, who would otherwise not be motivated by more innovative or enthusiastic leaders.

5. Interpersonal trust is an overarching mechanism of opinion leadership, affecting the relationships between opinion leaders, peers, and managers.

Trust facilitates influence through many processes like reliance in the opinion leader's judgement, social obligation and reciprocal action, or identification and empathy. Conversely, distrust can be a mechanism of neutral or negative reactions to innovation.

6. The normative role of opinion leaders within their groups can be explained by at least two processes of influence. One, more aligned or soft, leads to change which is perceived as self-driven and therefore more sustained. Other, more coercive or hard, leads to change which is felt as externally imposed and therefore more superficial and fragile. The same opinion leaders can rely on these distinct processes to influence colleagues with distinct stances on the innovations, in distinct stages of implementation.

7. There is a trade-off between engaging and spoiling opinion leaders, as exemplified by the contradictory effects of the activation of opinion leaders. Any attempts of mobilising opinion leaders beyond what they would naturally do seem to unleash contradictory effects across the system which can ultimately reduce their credibility.

This study adds to the global healthcare literature on implementation of innovations in three distinct ways. First, by fostering the implementation research agenda in LMIC through the analysis of a native-born solution for the problem of how to use evidence to improve health systems. Analysing change interventions implemented under real-world conditions may help to develop more feasible solutions for the health systems of low-and middle income countries (Yapa and Bärnighausen, 2018). Second, by contributing to the use of realist evaluation for healthcare research in Brazil and Latin America. In Brazil, the first realist studies in healthcare were only published in 2020 (Silva and Fegadolli, 2020; da Silva et al., 2020; Silva et al., 2020). Realist research has shown potential to illuminate complex healthcare problems and may represent a relevant contribution to a better use of knowledge to improve health systems in Brazil. This thesis is my small contribution to the development of that disputatious community of knowledge seekers envisioned by Ray Pawson.

Last, the lessons drawn from analysis of this intervention may rise attention to the topics of frugal and reverse innovation (Wadge et al., 2016; Yapa and Bärnighausen, 2018). Frugal innovation means 'doing more, with less, for the many, and being creative, innovative and resourceful in the face of institutional voids and resource constraints' (Harris et al., 2020, p.814). That is a good description for the opinion leaders' intervention of Florianópolis, which drew upon scarce resources, local expertise and creativity to produce positive changes in access to primary care and organisational leadership. When frugal innovations

developed in LMIC are adopted in high income countries this is called reverse innovation. Although the term denotes the idea that there is a right or preferred direction for innovation (usually from high- to low-and-middle- income countries), reverse innovation is indeed about improving dialogue in global health (Harris et al. 2020). Brazil and the UK already have a history of bilateral collaboration and reciprocal learning in health services that is not the rule in North-South relationships (Johnson et al., 2013). Future exploration of the hypotheses generated in this study might provide reciprocal learning opportunities and hopefully contribute to the development of feasible implementation strategies to improve primary care and global health.

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Appendices

Search strategies used in the initial literature review (Apr 2016)

OVID databases 1996-2016: Medline, Medline unpublished, Embase, PsycInfo, All EBM databases

1. opinion leader*.mp. [mp=ti, ab, tx, kw, ct, ot, sh, hw, tn, dm, mf, dv, nm, kf, px, rx, ui, tc, id, tm]

2. chang* agen*.mp. [mp=ti, ab, tx, kw, ct, ot, sh, hw, tn, dm, mf, dv, nm, kf, px, rx, ui, tc, id, tm]

3. exp Primary Health Care/

4. primary care.mp. [mp=ti, ab, tx, kw, ct, ot, sh, hw, tn, dm, mf, dv, nm, kf, px, rx, ui, tc, id, tm]

5. exp "Diffusion of Innovation"/

6. diffusion of innovation*.mp. [mp=ti, ab, tx, kw, ct, ot, sh, hw, tn, dm, mf, dv, nm, kf, px, rx, ui, tc, id, tm]

7. 1 or 2

8. 3 or 4

9. 5 or 6

10. 7 and 8

11. 7 and 9

12. 10 or 11

13. limit 12 to abstracts

14. limit 13 to English language

15. limit 14 to yr.="1996 -Current"

16. remove duplicates from 15

CINAHL 1996-2016

Opinion leader*

WEB OF SCIENCE core collection 1996-2006

((TS=("opinion leader*") AND TS=("primary care" OR "primary health care")) OR ((TS=("opinion leader*") AND TS=("diffusion of innovation*")) limited English

Scopus

(TITLE-ABS-KEY (("opinion leader*") AND ("primary care" OR "primary health care")) OR TITLE-ABS-KEY (("opinion leader*") AND ("diffusion of innovation*"))) AND PUBYEAR > 1995 AND (LIMIT-TO (LANGUAGE , "English"))

Total of entries after merging and deduplicating: 561

Tested elements of the initial programme theories

IPT1. How the recognition of opinion leaders motivates them to promote innovations	IPT2. How the participation of opinion leaders in implementation transfer credibility to innovations	IPT3. How examples of opinion leaders promote innovation adoption among colleagues
Recognition of opinion leaders and their involvement in the implementation	Involvement of opinion leaders in the production of innovations	Provision of innovation examples and practical support from opinion leaders
Buy-in and promotion of innovations (by the opinion leaders)	Interest in and acceptability of innovations	Adoption of innovations Forced adoption of innovations Alienation and resistance
Sense of appreciation and pride **Ownership** **Perception of social advantages**	Improved understanding of the innovation Trust and reciprocity* Perception of new group norms	Reduced uncertainty and fear and improved confidence Awareness of practice gaps and wish to comply with practice standards Shame
Concordance with the innovation* **Organisational support to the innovation** **Compatibility of the innovation with group norms/values*** **Wish to change practice and work environment**	Opinion leaders consistent, trustworthy, and accessible Personal relationships between opinion leaders and peers Uncertainty about the innovation* Early implementation stages	The similarity between opinion leaders and peers* Attractive and strong opinion leaders Perception of impending change Non-addressed barriers Judgmental comparisons and pressure from managers Late implementation stages

IPT = Initial programme theories

* Recurrent elements tested across the theories

List of themes, codes and cases

Themes (initial theories)	Institutional recognition motivates opinion leaders to sustain innovations and persuade peers to change their practice (theory 1)
	Opinion leaders promote positive attitudes towards innovations based on their credibility within peers (theory 2)
	The experience of opinion leaders shows the feasibility of adopting innovations, encouraging predisposed practitioners to adopt (theory 3)
	The experience of opinion leaders shows the feasibility of adopting innovations, constraining sceptic practitioners to adopt (theory 3)
Cases (relevant events)	Resistance to advanced access in the Bellevue clinic
	The trajectory of Ben from programme user to opinion leader
	The peer doctors' meetings of the District One
	The support of clinic-level opinion leaders to the nursing protocols
	The contribution of opinion leaders in the Access Workshops
	The pioneer opinion leaders of the Summerville clinic
	Alex the practice manager and opinion leader of the Magnolia clinic
Codes (theory elements)	Ideological affinity, work commitment and wish of individuation (M)
	Improved status and advantages of the opinion leader role (M)
	Interpersonal trust (M)
	Group membership and identification (M)
	Sense of participation and ownership (M)
	Reduced uncertainty related to innovations (M)
	Awareness of practice gaps, embarrassment (M)
	Differences in background, training and experience (C)
	Characteristics of the opinion leader: accessibility, coherence (C)
	Chronic structural barriers and institutional issues (C)
	A climate of impending change and coercion (C)
	Favouritism and exclusion in the selection of opinion leaders (C)
	The fit of the innovation to the local system and practice standards (C)
	Inertia and low receptivity to change (C)
	Groups and spaces of influence (C)
	Innovative versus ordinary opinion leaders (C)
	Interest in the innovations (C)
	Momentum for change, e.g., new staff and facilities (C)
	Formal roles and positions (C)
	Participative vs authoritative approach to implementation (C)
	Personal relationships between opinion leaders and peers (C)
	The similarity between opinion leaders and peers (C)

Compliance with quality standards for realist evaluations

Criteria	Standard	Approach adopted in this study
1. The evaluation purpose	A realist approach is suitable for the purposes of the evaluation; the evaluation questions are suitable for a realist evaluation	The study investigated how, why, for whom and when an agent-based programme worked in different settings (e.g., distinct clinics) and for different groups (e.g., doctors and nurses)
2. Understanding and applying a generative causation	A realist principle of generative causation is applied	The research question, programme theories and methods were consistent with generative causation, e.g., realist interviews tested causal processes based on contingent mechanisms of change
3. Constructing and refining a realist programme theory	Tentative programme theories are identified and developed; programme theory is 're-cast' and refined as realist programme theory.	The study elicited realist theories from the onset, which were articulated, tested and refined as CMOCs; multiple aspects of the programme and alternative explanations were investigated
4. Evaluation design	The evaluation design is described and justified; ethical clearance is obtained if required	The design followed the realist steps of developing, testing and refining theories; data collection started after obtaining ethical clearance
5. Data collection methods	Data collection methods are suitable for capturing the data needed in a realist evaluation	Multiple methods were used and triangulated; realist interviews were the main method; new data were collected based on findings from previous stages
6. Sample recruitment strategy	The respondents or key informants recruited are able to provide sufficient data needed for a realist evaluation	Recruitment was gradually purposive to enable testing and refining specific aspects and relationships within the theories
7. Data analysis	The overall approach to analysis is retroductive. Data analyses processes applied are consistent with a principle of generative causation; a realist logic of analysis is applied to develop and refine the theory	The analysis moved iteratively between theory and data in all stages, using retroductive reasoning. The thematic analysis went beyond categorisation to explain and demonstrate relationships between CMO elements and across theories
8. Reporting	The evaluation is reported using the RAMESES II reporting standard for realist evaluations. Findings and implications are clear and reported in formats that are consistent with realist assumptions	The thesis writing observed the RAMESES II reporting standards; methods were well described, findings were reported as middle-range theories, and implications were summarised to stakeholders

Adapted from (Wong et al, 2017)