Drivers of successful implementation of integrated care for multi-morbidity: Mechanisms identified in 17 case studies from 8 European countries

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ABSTRACT

This paper provides a deeper understanding of the mechanisms underlying implementation strategies for integrated care. As part of the SELFIE project, 17 integrated care programmes addressing multi-morbidity from eight European countries were selected and studied. Data was extracted from 'thick descriptions' of the 17 programmes and analysed both inductively and deductively using implementation theory. The following ten mechanisms for successful implementation of integrated care were identified. With regards to *service delivery*, successful implementers (1) commonly adopted an incremental growth model rather than a disruptive innovation approach, and found (2) a balance between flexibility and formal structures of integration. For *leadership & governance*, they (3) applied collaborative governance by engaging all stakeholders, and (4) distributed leadership throughout all levels of the system. For the *workforce*, these implementers (5) were able to build a multidisciplinary team culture with mutual recognition of each other's roles, and (6) stimulated the development of new roles and competencies for integrated care. With respect to *financing,* (7) secured long-term funding and innovative payments were applied as means to overcome fragmented financing of health and social care. Implementers emphasised (8) the implementation of ICT that was specifically developed to support collaboration and communication rather than administrative procedures (*technology & medical devices*), and (9) created feedback loops and a continuous monitoring system (*information & research*). The overarching mechanism was that implementers (10) engaged in alignment work across the different components and levels of the health and social care system. These evidence-based mechanisms for implementation are applicable in different local, regional and national contexts.

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1. Introduction

The WHO has reinforced the importance of integrated care in its worldwide call for people-centred and integrated health services (WHO, 2015). Numerous integrated care programmes for people with multi-morbidity have been established internationally (Rijken et al., 2018; Struckmann et al., 2018). Integrated care is the structured effort to provide coordinated, pro-active, person-centred, multidisciplinary care by two or more communicating and collaborating care providers that may work at the same organisation or different organisations, either within the healthcare or across the health, social, or community care sectors (including informal care) (Leijten et al., 2018). Even though it is increasingly perceived as a promising solution for addressing the complex care needs of people with multi-morbidity, integrated care is complex and involves overcoming many barriers in the fragmented health and social care systems (Valentijn et al., 2013). Until now, valuable insights have been provided into the building blocks of integrated care programmes (Leijten et al., 2018) (see Fig. 1), but little evidence is available on *how* to implement integrated care (Goodwin, 2017).

Relatively few integrated care programmes have expanded beyond the initial pilot phase and become mainstream (Goodwin, 2017). Hence, it remains largely unclear which implementation strategies contribute to successful upscaling and sustainable integrated care programmes that are structurally embedded in the health and social care system. Previous research stresses that implementation of integrated care goes far beyond the implementation of structures (Starling, 2018; Valentijn et al., 2013) and that focusing on enabling implementation strategies is essential (Borgermans et al., 2017). More insight is required into the working mechanisms of integrated care and the actual strategies that contribute to successful implementation, preferably substantiated by implementation theory (Goodwin, 2017; WHO, 2015).

There are various theories and models on implementation, one of the most popular being May's Normalisation Process Theory which focuses on the contribution of different agents to the social processes of innovations and how these innovations become normalised in their social context (May, 2013). However, it is difficult to translate this theory into concrete actions (Goodwin, 2017). More concrete, and also comprehensive, is the Developmental Model of Integrated Care (Minkman et al., 2011). However, this implementation model does not specifically address integrated care initiatives for people with complex health and social care needs or people with multi-morbidity and was developed for the Dutch context specifically. More insight in the context of integrated care is provided by the SCIROCCO model that was designed to assess whether the health care system is mature enough to provide integrated care. This model includes a practical tool to guide the dialogue between regional stakeholders involved in integrated care (Grooten et al., 2018). Practical guidance to managers and planners is also provided by the EU project INTEGRATE (Cash-Gibson et al., 2019). Although simultaneous action at different levels of the health and social care system is recognised as important for successful implementation of integrated care (Goodwin, 2017), most models, theories and guidelines do not make an explicit distinction between changes at the micro, meso and macro level of the system (Breton et al., 2019). Hence, a comprehensive implementation strategy that addresses the multi-layered context of integrated care for people with multi-morbidity and includes concrete suggestions for change management is missing.

This paper aims to identify mechanisms underlying successful implementation and to provide a deeper understanding of these mechanisms by analysing the real-world implementation strategies of 17 integrated care programmes for complex patients with multi-morbidity, linking them to theories of implementation. Initiating and strengthening these mechanisms will contribute to better evidence-based policy making in the field of integrated care.

Table 1
Description 17 SELFIE integrated care programmes.

| Country	Name programme	Type of programme	Description of the programme
Austria	Health Network Tennengau	Population health management	Bottom-up network comprised of social and health service providers and voluntary organisations.
	Sociomedical Centre Liebenau	Persons with problems in multiple domains of life	Bottom-up model providing health and social care predominantly to vulnerable and disadvantaged groups.
Croatia	GeroS	Frail elderly	Integrated care model for geriatric patients with multi-morbidity.
	Mobile Multidisciplinary Specialist Palliative Care Team	Palliative care/oncology	Integrated care programme for palliative care patients.
Germany	Casaplus	Frail elderly	Case management programme for elderly (>55) with multiple chronic conditions and at high risk for hospital admissions within the next 12 months
	Gesundes Kinzigtal	Population Health Management	Population-based approach that organises care across all health service sectors and indications.
Hungary	Onko Network	Palliative care/Oncology	Local initiative to improve clinical outcomes via timely access to quality assured and unfragmented health care.
	Palliative Care Consult Service	Palliative care/Oncology	Supports patient pathway management across providers (e.g. between acute care to home care)
Netherlands	U-PROFIT	Frail elderly	Nurse-led intervention for frail elderly living at home
	Care Chain Frail Elderly	Frail elderly	Targets vulnerable older person living at home with complex care needs.
	Better Together in Amsterdam North	Persons with problems in multiple domains of life	Targets persons with complex needs in multiple life domains.
Norway	Learning Networks	Frail elderly	National case management programme focusing on older person enrolled in home care service or short term stay in nursing home.
	Medically Assisted Rehabilitation Bergen	Persons with problems in multiple domains of life	Aimed at people with opioid addiction in Bergen and provided health and social care.
Spain	Barcelona-Esquerra	Population Health Management	Care coordination between different providers and care levels in one of the four healthcare sectors of the city of Barcelona.
	Badelona Serveis Assistencials	Frail elderly	Provides healthcare and social support services with 24-7-365 emergency support.
UK	Salford Together	Frail elderly	Originally aimed at the elderly (>65; later expanded to all adults) and consists of case management of high-risk patients with support of community assets and centre of contact.
	South Somerset Symphony Programme	Population Health Management	Aimed primarily at multi-morbidity and consists of general practitioner located in a hospital hub individually managing the most complex patients and co-location of health coaches in primary care to assist with disease self-management and prevention.
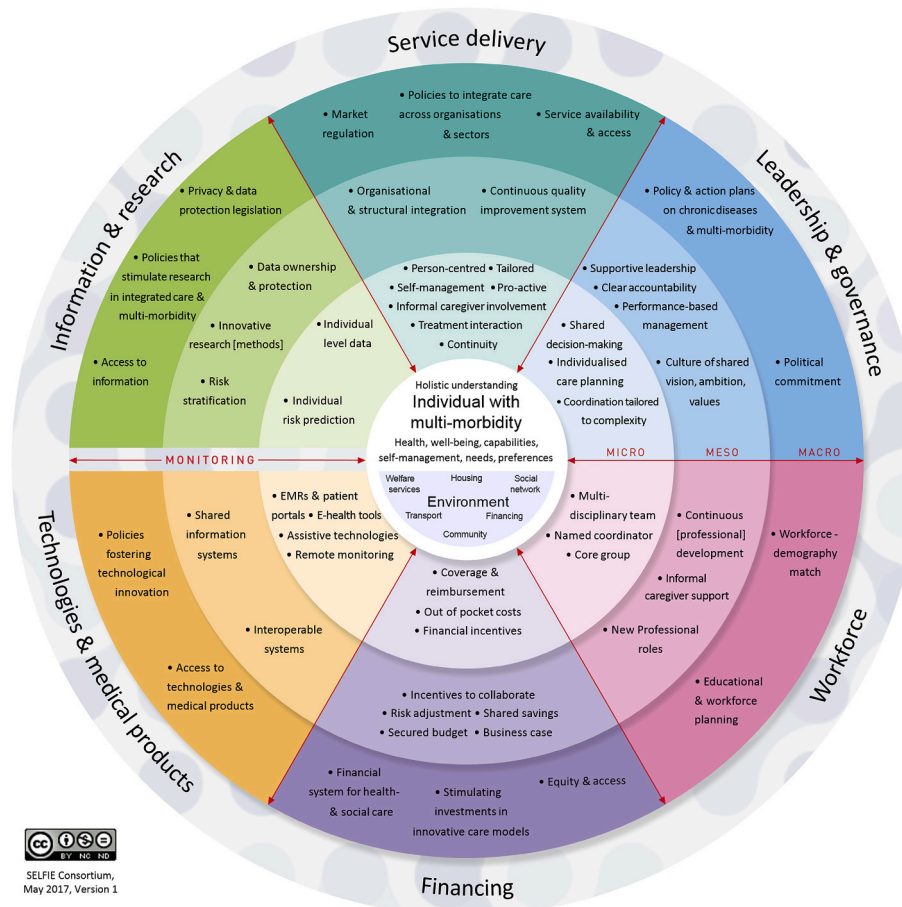
Fig. 1. The SELFIE Framework for Integrated Care for multi-morbidity. The framework has six components; each component includes important elements of integrated care at the micro, meso, and macro-level.

2. Methods

2.1. Design & setting

In the Horizon2020 project Sustainable intEgrated care modeLs for multi-morbidity: delivery, FInancing and performancE (SELFIE), we used a multiple case study design and studied 17 integrated care programmes in eight European countries (i.e. Austria, Croatia, Germany, Hungary, the Netherlands, Norway, Spain and UK).

The process of selecting the 17 programmes has been described in detail elsewhere (Rutten-van Mölken et al., 2018). Briefly, we identified the programmes through an international scoping review (Struckmann et al., 2018), national publications and consultation of national experts and networks. This led to a 'long-list' to which we applied the following selection criteria: the programme addressed multi-morbidity, met the definition of integrated care as given in the introduction, was innovative in the country's context, had outcome data, and was expected to be operational for the next two years. The programmes were required to have a formalized status (of any form) and provide care to a minimum of 100 people. Moreover, we aimed to have variation across programmes with respect to their aims, target groups, scope, focus and level of maturity. An overview of the 17 SELFIE programmes is presented in Table 1.

2.2. Procedure & data collection

In the SELFIE project we generated thick descriptions of all 17

integrated care programmes to gain a deep understanding of the integrated care programmes from different stakeholders' point of views (for more detailed information see Czypionka et al., 2020). Thick descriptions aim to investigate patterns of cultural and social relationships while taking into account the specific context of the studied case (Geertz, 1973). Data was collected by document analysis and semi-structured interviews. For the interviews, a purposive sample was used that was guided by the information from policy document analysis. Respondents were invited via email and/or phone. The following stakeholders were interviewed: programme managers, programme initiators, representatives of payer organisations, medical & social staff, informal caregivers and clients or their representatives (Supplementary table 1). In total, 233 interviews were conducted. The interviews were carried out face-to-face between November 2014 and September 2016 and lasted between 30 and 90 min. They were conducted in the respective language of the country by researchers of the SELFIE team and were digitally recorded and transcribed. The documents and interview transcripts were analysed using the method of content analysis developed by Mayring (2000).

The current study is an overarching analysis of the 17 thick descriptions reports written with respect to the implementation strategies applied. The thick descriptions were structured along the lines of the conceptual framework of integrated care as developed in the SELFIE project (see Fig. 1) which has six components related to the practical components of a health system: (i) service delivery, (ii) leadership & governance, (iii) workforce, (iv) financing, (v) technologies & medical products, and, (vi) information & research (Leijten et al., 2018). Each

component has three levels. The micro-level comprises the level where the interaction between the patient and/or professional takes place, the meso-level refers to the organisation or community, and the macro-level refers to the policy environment of the programmes which could be at local, regional and/or national level.

2.3. Data analysis

First, we deductively coded each of the 17 thick descriptions and structured them according to the six components and underlying elements of the framework presented in Fig. 1. Examples of these codes were 'leadership and governance' and 'culture of shared vision, ambition and values'. This coding process was led by the question: How was the integrated care programme implemented and what type of work was done to implement the integrated care model? Three researchers (WL, VK, JK) analysed two thick descriptions together comparing their data extraction forms to align their interpretation. The remaining programmes were divided over the three researchers. Second, the data extraction forms were cross-checked by the principal researchers of each of the 17 programmes who also added the latest available information on the implementation of the programme. Thirdly, we inductively analysed the coded text with a multidisciplinary team (WL, VS, RB and MR) based on these questions for each of the six components: How is integrated care implemented at the micro, meso and macro level and what type of work was done by the stakeholders to realise integrated care? This was an iterative, abductive process that took place in several rounds in which we made iterations between theory and the empirical data (Timmermans and Tavory, 2012). Theory on implementation and change management was used to support the inductive analysis. A practice-based perspective was adopted to identify the mechanisms of implementation of integrated care. That is, we were interested in the work that actors undertook to create the contexts for implementation (Nicolini, 2012).

3. Results

We identified ten mechanisms of implementation, nine of which were primarily linked to the six components of the SELFIE framework and one of which was an overarching strategy (see Fig. 2). In this section, we describe, per mechanism: 1) what we observed in the

overarching analyses of the 17 case studies; 2) how this links to the implementation literature (where possible); and, 3) examples from the case studies.

3.1. Mechanisms of implementation for 'service delivery'

3.1.1. Adopt an incremental growth model (1)

We observed in the 17 case studies that they dealt with the challenge of complexity by adopting an incremental growth model rather than a disruptive innovation approach. Stakeholders adopted a stepwise approach to change by building upon what was already there (e.g. existing collaborative networks) and gradually expanded and broadened the scope of the integrated care programmes. It took time to develop trusting relationships between stakeholders. Moreover, feedback and monitoring were needed to incrementally implement and adapt the integrated care programmes. Gradually broadening the scope of a programme was observed with respect to the target population, the continuous addition of new interventions that fit into the overarching integrated care programme, or the expansion of services towards person-centred care.

The case studies seemed to support what has previously been described by Leutz (1999): "One can integrate all of the services for some of the people, and some of the services for all of the people, but cannot integrate all of the services for all of the people". The changes required to implement integrated care are often greater than anticipated (Ling et al., 2012), and therefore a stepwise approach is an important success factor for the implementation of integrated care (Borgermans et al., 2017).

One example of a successful adoption of the incremental growth model is U-PROFIT [NL], an integrated care programme for frail older people which evolved in three successive projects. First, a local, bottom-up approach was adopted in which the elderly care nurses working in the primary care centres were personally responsible for setting up a collaborative regional network. However, these collaborations were mostly based on informal relationships and were unstable due to staff turnover. Moreover, collaboration at the organisational level was difficult, due to bureaucracy, privacy and funding issues. Thus, in the second project, the initiators worked around these persistent barriers of integrating health and social care by involving and hiring district nurses from home care organisations as elderly care nurses to establish good
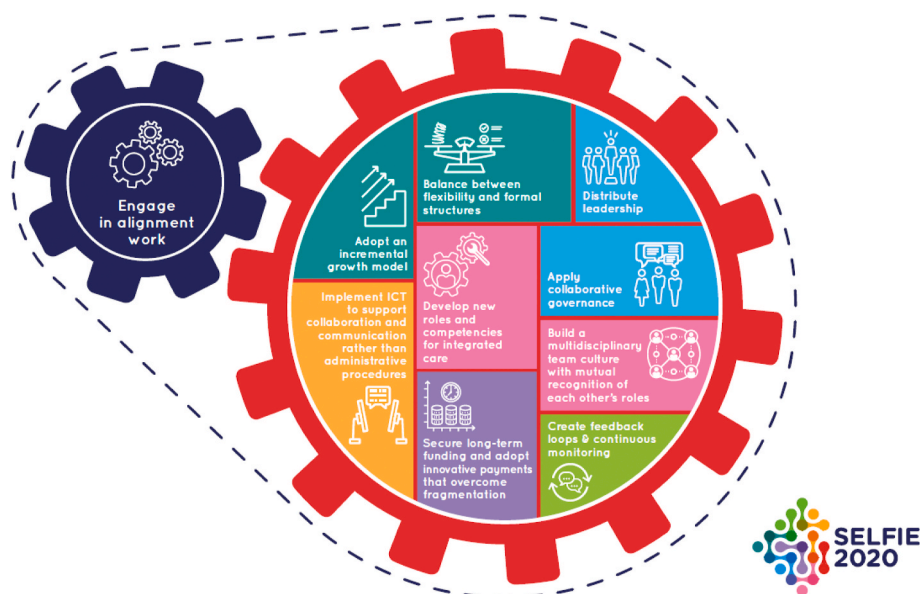

Fig. 2. 10 implementation mechanisms for integrated care for multi-morbidity.

collaboration between GP practices and home-care organisations. In the third project, this integration between health and social care was further enhanced and intensified by assigning two project leaders at the meso-level to each neighbourhood, one health care professional and one social care professional who were jointly responsible for integrated frail elderly care in the region.

3.1.2. Balance between flexibility and formal structures (2)

Although a person-centred approach is, by definition, flexible in terms of service delivery, the case studies in the SELFIE project showed that sustainability benefitted from a certain level of standardisation of processes when implementing and embedding this person-centred approach in routine daily practice (Horton et al., 2018). This especially applied to integrated care programmes that involved a wide range of professionals from the health and social care sectors. Standardisation was realised by a clear division of tasks in the multidisciplinary teams, the use of protocols for specific patient groups or protocols around common themes and the use of standardised procedures or instruments This gave professionals in the programmes something to fall back on. However, it was important that they were not obliged to use them and that managers left room to deviate from standards in order to respond flexibly to the diverse problems in their patient populations. Within the population health-management programmes in the SELFIE project, standardisation was achieved by establishing formalized structures and responsibilities for different sub-programmes within the overarching programme. These sub-programmes were set up for specific patient groups such as elderly persons in nursing homes. In some of them, care was organised in the form of modules focusing on specific themes such as medication adherence, physical exercise or smoking cessation support.

To realise organisational integration in the programmes, informal relationships were complemented by formal structures within networks of organisations. Relying on informal relationships and partnerships between professionals of different organisations was strongly based on really knowing each other personally and profound mutual trust. While it was highly likely that these types of collaboration would continue and even increase over time, it was, nonetheless, seen as important to support these informal partnerships with more formal ones so they were not lost over time but expanded their responsibility and accountability. In particular, when integration involved multiple organisations, or when the programmes were entering a more mature phase, organisational integration was formalized in contracts, agreements, officially named networks, or newly founded umbrella organisations. For example, Badalona Serveis Assistencials (BSA) [ES] serves a population of 236,000 citizens living in a suburban area of Barcelona. A large and influential umbrella organisation at the meso-level was crucial to successfully realise integration between health and social care. This organisation functioned as regional and structural integrator, was responsible for the coordination of all participating providers and overcame the continuing fragmentation between health and social services. The municipality was strongly involved and assigned the responsibility for social services to the umbrella organisation.

3.2. Mechanisms of implementation for 'leadership & governance'

3.2.1. Apply collaborative governance (3)

Many of the case studies in the SELFIE project managed to engage all relevant stakeholders in the implementation process. It was seen as important to promote communication and consensus-oriented decision-making and to continuously invest in building good relationships between professionals and the management, among professionals, and with the payers, policy makers, patient representatives and the community. Good relationships were seen as necessary to increase individual engagement, develop a common problem-definition, a shared sense of urgency that usual care needs to change, a common understanding of the aims, a persuasive vision on collaborative actions to achieve the aims and mutual gains for the stakeholders.

This process of engaging different stakeholders, building trust and solid relationships is known as collaborative governance (Ansell and Gash, 2008). This collaborative governance was layered in the sense that at both interactions between micro-meso and between meso-macro levels collaborative practices were developed. However, it is not sufficient to involve all relevant stakeholders, as change can only happen with the right capabilities and skills. Bringing this expertise together into local programme-teams is advocated as beneficial for achieving change when embarking on unfamiliar activities (Starling, 2018). A shared, compelling and persuasive vision, and shared values to underpin integration, should be developed based on mutual respect for each other's roles and responsibilities. Strategies described in the literature to convince stakeholders of the necessity to engage in collaborative actions are a 'value case' and 'shared narrative' (Goodwin, 2017). A value case provides insights into the benefits of the integrated care programme for all stakeholder groups involved, rather than for one stakeholder as in a business case, and defines value in broad terms rather than only financial returns. Building a value case is a pro-active approach and a social process engaging all stakeholders, which contributes to the formulation of a common problem definition and a shared vision. Developing a shared narrative is important to explain why integrated care matters for stakeholders, including patients (Goodwin, 2017).

Collaborative governance was clearly demonstrated in the case study Health Network Tennengau [AU], a bottom-up network comprised of social and health service providers and voluntary organisations who provide care to all inhabitants in the Tennengau region in Austria. Although most activities targeted senior citizens and people with multi-morbidity who require social care, all major players in health and social care were involved at the meso-level. They experienced a shared motivation for improving patient care and creating a 'model-region' of integrated care. Frequent communication and regular meetings in different circumstances led to a common language, mutual appreciation and trusting relationships being formed. At organisational level, each member had one vote in the cooperative and small and large network members were treated as equals.

3.2.2. Distribute leadership (4)

In many of the case studies in the SELFIE project, leadership was clearly distributed across different levels: national, regional, organisational and unit level. Supportive leadership was more likely to be present when there was one organisation that was exclusively responsible for supporting the implementation. When several organisations were involved, other types of leadership were found necessary. We observed many occasions in which specific management boards overseeing the integrated care initiative were set up or elected. Each organisation in such a board had either one vote to ensure equitable cooperation between small and large network members, as above, or responsibilities rotated between organisations during the meetings. This led to shared responsibility, which in turn strengthened cooperation. Supportive leadership within the organisations was often arranged by assigning visionary and well-respected project leaders acting as linchpins between stakeholders at different levels and the management, thereby enabling dissemination of the intervention.

Whereas in the previous mechanism on collaborative governance the focus was on the ways in which actors were brought together in forming a network; the ways in which those networks are organized and led is also of importance. Research acknowledges that leadership in networks of professionals and organisations is more challenging than leadership in a single organisation and leadership in networks is often characterised by "ambiguity, diversity, dynamism, and complexity" (Sydow et al., 2011). Literature also confirms that visionary leadership within organisations is required for integrated care. Leadership skills such as organisational and change management skills are important, similarly clinical leadership skills to engage and motivate other physicians for integrated care (Ling et al., 2012; Nieuwboer et al., 2019).

OnkoNetwork [HU], a local initiative for cancer patients in the Somogy county, aims to improve clinical outcomes of complex patients with cancer in the hospital-setting via timely access to quality-assured and non-fragmented healthcare services. The strategic director of the hospital was described as a visionary leader and his supportive leadership was reported to be the most important enabler for the implementation of the programme. He managed to get hospital physicians to accept that their work would be closely monitored on two key indicators, i.e. diagnostics must be completed and multidisciplinary treatment planned within 30 days, and therapy must be initiated within a further 2 weeks after patients entered the hospital. His leadership was strengthened by assigning two supervisor physicians who linked physicians and the administrators of the intervention team and enabled communication despite their stakeholder power distance.

3.3. Mechanisms of implementation for 'workforce'

3.3.1. Build a multidisciplinary team culture with mutual recognition of each other's roles (5)

Creating a team culture and establishing productive working relationships within a multidisciplinary group of professionals reinforced the uptake of the SELFIE programmes. New ways of working in teams and collaborations became accepted over time and were supported by introducing team activities into routine daily practice and through organising regular team meetings. In many case studies, multidisciplinary team meetings were organised where specific patients and their individualised treatment plans were discussed, aiming for improved care coordination. Those meetings contributed to a recognition of each other's roles and tasks within the multidisciplinary teams, facilitated consistent communication, and reinforced or built relationships. We also saw that meetings with professionals and managers from different disciplines and organisations were often embedded in working groups around specific themes, such as training and education on self-management support, development of protocols and quality indicators. These working groups led to further development and improvement of the integrated care programmes based on the exchange of information and joint contributions of different professionals. Moreover, they empowered professionals and increased the joint responsibility for the integrated care programme. When building a team culture, it helped to create physical proximity between the professionals. Professionals developed deeper understanding of each other's work and the context in which it is performed, which stimulated co-creation of integrated services with respectful acknowledgement of each other's competencies.

However, it is also stressed in the literature that building a multidisciplinary team is a complex endeavour (Marsilio et al., 2017). Addressing the complex needs of people with multi-morbidity, though, can give professionals with different backgrounds a common goal, even when they are not used to collaborating. Research shows that co-location of professionals facilitates development of relationships because it improves both the frequency (Mascia et al., 2019) and quality of (face-to-face) communication (Marsilio et al., 2017). Moreover, the involvement of a local champion (professional or project manager who influences and inspires others) could also facilitate the development of a team culture (Ling et al., 2012) and increase personal engagement and dedication of professionals.

One of the examples of building a multidisciplinary team culture in the SELFIE project was found in Salford Together [UK], which implemented Multidisciplinary Health and Social care Groups (MDGs) at the meso-level. Salford Together aimed initially at the elderly (>65) and consisted of case management of high-risk patients with support of community assets and a centre of contact. The MDGs involved a wide range of professionals such as practice managers, practice nurses, GPs, social workers, district nurses and staff from the local authority, although the skill-mix of professionals attending each individual MDG was variable in practice in line with availability and other work pressures. Multidisciplinary case conferences were organised to better plan, co-ordinate and deliver care for complex patients. In addition, team meetings were organised to improve collaboration, encourage professionals and increase their motivation. Co-location of the workforce was realised to foster inter-professional relationships, for example by contracting social workers to the lead NHS hospital organisation from their previous Local Authority posts.

3.3.2. Develop new roles and competencies for integrated care (6)

The introduction of new roles and task (re-)assignments were important integration enablers in the 17 case studies. The true 'integrators' were often professionals that were assigned new roles, such as care coordinators or case managers. They were responsible for coordinating and connecting all levels and professionals of the health and social care system, coordinating the teamwork, and monitoring patients' pathways. Across the programmes, we commonly observed task-shifting, whereby, for example, nurses took over specific tasks from physicians, and task differentiation, whereby, for instance, nurses worked in additional, complementary roles to physicians. When the new roles and tasks required the development of new competencies, the programmes provided additional education and training. Examples included training in designing new work processes within integrated care programmes, using specific instruments for holistic assessments, using new ICT systems, mediating values of the programme or increasing knowledge about the health and social care system at local, regional or national level. New professional roles required good preparation in terms of a clear communication strategy, and a thorough description of new ways of working to patients to remove reservations and scepticism. Programmes sometimes experienced opposition from stakeholders towards the introduction of new roles and as a response they tried to include them in team meetings, discussed their issues and achieved compromises. If a group of professionals, such as GPs, was reluctant to engage in the teamwork, task-shifting was also used as a way to overcome this barrier by offering a win-win with reduced workload.

Task-shifting is a means to counterbalance the shortage of health care professionals which is a challenge in all countries of the SELFIE project (Busetto et al., 2017). According to the literature, task-shifting is implemented to decrease a physician's workload, to increase access to health care, to devote more time and attention to patients, and to improve satisfaction of patients and their relatives (Tsiachristas et al., 2015). Current research also emphasises the importance of developing new competencies for professionals such as governance, patient advocacy, effective communication, team work, quality assurance, and competencies specifically related to the changing role of patients as active partners in the care process, such as self-management support, motivational interviewing, communication, preventive working, and people-centred care (Langins and Borgermans, 2016).

For example, Casaplus [DE] introduced a new professional role in the form of case managers, who were extensively trained at a university in a certified, specialised study programme for two years. In addition, a nursing background and several years of professional experience were a prerequisite for becoming a case manager in the Casaplus programme.

3.4. Mechanism of implementation for 'financing'

3.4.1. Secure long-term funding and adopt innovative payments that overcome fragmentation (7)

At the start of virtually all integrated care programmes in the SELFIE project, start-up funding from national or structural EU funds was helpful to boost the initiation and development of the programmes. However, start-up funding was not sufficient. Programmes indicated that, for sustainable implementation, they needed financial security. Long-term contracts are a means to provide security, ensure continuity for teams and avoid the annual circus of new budget negotiations that occurred in some of the participating countries and were found to be very time- and energy-consuming. Applying collaborative governance

was found to be a helpful strategy, involving the payers, and developing relationships with the payer over time, although that was sometimes hampered by frequent staff turnover. Long-term contracts often included the condition to monitor quality indicators, which was possible in case studies that had good data infrastructure. Implementing long-term contracts was therefore found to be easier in settings where ICT systems were more supportive of integrated care than in others.

Apart from financing, it is generally acknowledged that we need innovative payment models that incentivise integration instead of fragmentation (Leijten et al., 2018; Struckmann et al., 2017). Based on a systematic review and examples from the 17 case studies, Stokes and colleagues developed a typology for integrated care (Stokes et al., 2018). This typology suggests that payment models which have a broad scope, in the sense that they cover a wide patient group (ultimately all patients in a catchment area), include care delivered by multiple sectors (primary, secondary, social care) plus multiple suppliers within each sector, and have a long time horizon, are more likely to incentivise integration. Moreover, payment models in which budgets are pooled, shared-savings/loss agreements are included, and the amounts paid form a large part of the provider's income are more likely to stimulate integration, as do payments that include some form of measuring and rewarding quality (Stokes et al., 2018). However, there is still limited scientific evidence of the effects of these innovative payment models (Stokes et al., 2019).

Among the programmes in the SELFIE project, Gesundes Kinzigtal [DE], a population-based approach that organises care across all health service sectors and indications, successfully experimented with innovative payment methods. In Germany from 2004 to 2008 integrated care contracts benefitted from a law that removed existing barriers to developing and implementing integrated care models and provided financial incentives for both sickness funds and providers to implement care innovations. Gesundes Kinzigtal received start-up funding from the two participating sickness funds. Resources were pooled at the meso-level to enable a more flexible use, and a shared savings contract was developed in which savings were shared among the management organisation Optimedis, the participating sickness funds, and the local physician-network. In Gesundes Kinzigtal, the first shared savings contract was signed for a ten-year term, which provided an incentive to focus on prevention. Also, payment incentives were used to motivate professionals to participate in the integrated care programmes and included add-on payments to encourage coordination between patient goals and physician actions. These payments also rewarded value-based activities, such as goal-setting agreements (as part of an individualised care plan) between doctors and patients, adding additional services for patients, such as nursing homes that offer physical training to prevent falls, and participation in the Electronic Health Record (EHR). Physicians in Gesundes Kinzigtal were also reimbursed at an hourly rate for additional work conducted with project groups or quality circles. In addition, physicians received compensation for their investments in improved IT-capacities.

3.5. Mechanism of implementation for 'technology and medical devices'

3.5.1. Implement ICT to support collaboration and communication rather than administrative procedures (8)

Many clinical ICT systems were primarily designed to facilitate the accountability of the organisation to payers and policy makers instead of the exchange of information between professionals to effectively support integrated care. This often led to the development of separate communication platforms and digital information sharing tools that operated alongside the existing clinical ICT systems. In some case studies the development of these shared information systems was hampered by lack of technical interoperability. However, in the more mature programmes examples of well-used shared information systems were found, which were developed incrementally over a long time period based on the continuous input and close involvement of professionals. In some

case studies, ICT systems were helpful in identifying the target group within the entire population, in risk stratifying the target group, in monitoring process and outcome data at an aggregated level and in providing feedback on individual level data.

The socio-technical approach to ICT in healthcare (Berg, 1999) also emphasises that an ICT innovation should line up with cultural and organisational change with the aim to generate a fit between technology and working practices. Working practices within a department or network are perceived as a heterogeneous network of people, routines and procedures within this approach, so implementing supportive ICT for integrated care is even more complex. It is crucial to include the end users in the processes of design and implementation and to iteratively create designs that are flexible for adaptations in service delivery (e.g. the development of new standards or professional roles).

An example of supportive ICT can be found in Badalona Serveis Assistencials (BSA) [ES]. An integrated EHR was implemented at the meso-level which enhanced communication and information flows across the continuum of care to support health and social care professional practice. The EHR was implemented incrementally to make the process easier for ICT staff and minimise the disruptions in care. In BSA, but also in the other Spanish programme in the SELFIE project, AISBE, the EHRs facilitated exchange of information with the Catalan Shared Medical Record (HC3). HC3 gathered all documents about the status and progress of a patient during the care process, providing access in an organised manner under the appropriate confidentiality and security settings. The HC3 was developed incrementally and iteratively over a period of many years, based on input of ICT-professionals and different clinical professionals and organisations, discussing the data required to optimise service delivery and ensuring organisational interoperability. With this collaboration, the records became compatible so that professionals could access both the clinical and health information from a patient at any place and time needed. In Catalonia, a regional population-based health risk assessment tool was also used, based on an open-source algorithm that predicts individual patient risk for hospitalization and updated every 6 months based on multi-morbidity information and registry data with high-risk patients regularly flagged in the ICT system.

3.6. Mechanism of implementation for 'information & research'

3.6.1. Create feedback loops & continuous monitoring (9)

Feedback and monitoring were found to be crucial strategies for the implementation of the integrated care programmes. The SELFIE programmes focused on person-centredness and self-management and for individualised care planning and shared decision-making feedback from the patient was important. Feedback was provided during (face-to-face) interactions and required a continuous and trusting relationship between professionals and the patient. Managers also embedded feedback loops and monitoring of patients in structures that were part of the integrated care programme, such as the presence of patients in multidisciplinary team meetings and the involvement of patients in stakeholder advisory boards. On the meso-level, structures were developed that facilitated feedback between stakeholders involved in the implementation, such as team meetings, working groups and stakeholder meetings. Research institutes were closely involved in the evaluation of the 17 programmes,. Evaluation results were used for quality improvement but also for raising awareness of the programmes, building legitimacy, and negotiating with payers on funding. It was said to be important that the results had a scientifically sound evidence base to convince payers and policy makers that scarce resources were allocated to services that had proven value for money.

Incrementalism implied adaptation and continuous improvement of the programme by monitoring of working processes and outcomes at different levels of the organisations and of different stakeholders involved in the integrated care programmes, consistent with the theoretical concept of reflexive monitoring (May, 2013). Continuous

monitoring and feedback required a culture of openness and willingness to enable the adaptation of working methods and continuous professional development, based on this input. With regards to monitoring, research institutes should work closely together with the implementersand align their evaluation design to the intervention (Borgermans et al., 2017).

An example of feedback and continuous monitoring was demonstrated in the Palliative Care System in Croatia which is currently scaling up nationwide after local piloting. Outcomes of quality indicators related to integrated care were systematically collected (e.g., continuity of care; education; communication and psychological care) to improve and develop palliative care in Croatia. In the SELFIE project, this case study was evaluated with a rigorous study design, which also stimulated the enrolment of palliative patients in the evaluation of the programme.

3.7. Overarching mechanism of implementation

3.7.1. Engage in alignment work (10)

The SELFIE programmes put a lot of effort into the continuous alignment of the components and corresponding elements, because they were found to be interrelated and could not be perceived in isolation. Literature confirms that simultaneous action at different levels is a prerequisite to support the implementation process of integrated care (Goodwin 2017). A common feature of the programmes in the SELFIE project, which illustrates this need for alignment, is the implementation of an individualised care plan. At first, it needs to be determined which patients need individualised care planning, for example using risk stratification tools (framework component: information & research). A holistic understanding serves as a basis and input for the individualised care plan (component: service delivery) and the goals and options are discussed with the patient and informal caregiver (component: leadership & governance). This requires self-management skills of the patient, i.e. being empowered and engaged (component: service delivery). The individualised care plan is regularly monitored and communication can be facilitated by ICT tools that support quick and easy communication among the involved multidisciplinary professionals (component: technologies & medical products). Often new professional roles, such as case managers, are established to tailor the coordination of this complex care which implies that they are accepted by other professionals, (component: workforce).

Moreover, we observed that many case studies employed implementation activities that simultaneously addressed the micro, meso and macro-levels of integration, but that the meso-level played the most crucial role in the alignment work. They realised that an enabling environment is crucial for realising change (Goodwin, 2017), and that macro-level policies are often not supportive of integrating care (Auschra, 2018), but at the same time experienced how hard it was to change macro-level barriers. The most frequently experienced macro-level barriers were of a technical (e.g. lack of technical interoperability of ICT systems between organisational and regionally based systems), financial (e.g. fragmented payment systems for health and social care and limited incentives to collaborate), cultural (e.g. cultural resistance towards changes in health care delivery), or political (e.g. political parties opposing preventive lifestyle improving interventions) nature. Nevertheless, the integrated care programmes in the SELFIE project were implemented successfully, which illustrates that they found strategies to cope with or work around this macro-level context.

One strategy observed was to accept the macro-level context as it came and align the integrated care initiative within the given regulations. For example, capitalising on the attention of funders facing serious budget cuts during the financial crisis to engage a shift in focus from optimising multidisciplinary residential care towards supporting self-management, self-sufficiency and autonomy of patients at home, rather than having to change regulations to achieve this shift. A second strategy was to find ways to work around the barriers. For example, when information was not able to be shared between health and social

care professionals because of privacy issues. When social care workers could not be invited to multidisciplinary team meetings because medical problems were discussed, a distinct meeting was scheduled with them to discuss the aspects of the individualised care plan that were directly relevant to them. Another solution was for the primary care practice to employ social care providers directly rather than as a third party, which enabled them to access the same information system. A third strategy was to actively try to change the macro-level context and build an enabling environment to co-create integrated care initiatives. In Norway, the municipality was actively involved in the management level of the intervention and gained knowledge of what was politically advantageous to them in order to increase their commitment and make the programme a success. In all of these examples of alignment work, it was the meso-level of the organisations where most of the alignment was initiated.

4. Discussion

The body of evidence on integrated care is increasing but there is an urgent need to expand our knowledge on *how* to implement integrated care. This study aimed to provide evidence on the implementation of integrated care based on an empirical analysis of the implementation process of 17 case studies in eight European countries, in combination with scientific literature on implementation and change management of integrated care. A comprehensive approach led to the identification of ten mechanisms for implementing integrated care and for each of them concrete implementation and change management strategies were formulated. Drawing on evidence from multiple countries and local settings, we believe that these are applicable to many different integrated care initiatives, even if the local, regional and national contexts differ.

Firstly, the examples presented show that the 17 programmes clearly recognised the interrelatedness of the six components of the SELFIE framework and the need to align the implementation work across the components at all three levels of the health and social care systems: micro, meso and macro. The continuous alignment efforts of the 17 programmes emerged as an overarching implementation mechanism. The mechanisms themselves are closely interrelated and should also be carefully aligned. An incremental growth model, for example, could gain from continuous monitoring and feedback loops. Finding the right balance between flexibility and formal structures is related to distributed leadership: on the one hand professionals should be supported by evidence-based protocols, but on the other hand they should feel empowered to deviate from protocols and supported to do so by leaders in different layers of the organisation.

Secondly, our results show that the meso-level is the driving force of integration and is essential for the implementation of integrated care in a fragmented macro-level context. The mechanisms in our study mostly relate to the meso-level and most implementation activities occurred at the meso-level. The meso-level was crucial for coordinating and aligning work with the micro and macro levels, for example for collaborative governance. Managers of integrated care initiatives thus must learn to work in the layered structure of healthcare systems (van de Bovenkamp et al., 2017). The macro-level can be a substantial barrier for implementation and some barriers appeared to be universal, for example the fragmentation of funding different sectors of the care system and privacy and legislation issues. However, our results demonstrate that implementing integrated care is possible despite these barriers as they are not static; there are opportunities to work around them and stakeholders in integrated care could actively influence the macro context. Nonetheless, it is important to emphasise that the macro-level can be the driving force for substantial organisational or structural changes as well as their sustainability and scale-up. Payment changes, in particular, were examples where the macro-level appears to be crucial, successful implementation in individual programmes seems to overlap with presence of national-level policies (Stokes et al., 2018). Political commitment was a

strong and common facilitator in some of our case studies. However, the level of political commitment differed. In Croatia, a health system with a strong centralised context, the political commitment at the national level was crucial, for example, in the form of National Strategic Plans on information systems and palliative care. In Spain, with strong autonomous regions, the political commitment at the regional level was essential to structure the Barcelona area into four integrated health areas and implement the Electronic Health Record in the region. In Norway, the political support from the municipalities was an implementation enabler and the municipalities were an important stakeholder in the integrated care programmes.

4.1. Strengths & limitations of this study

Our study provided valuable insights in the real-world implementation of a variety of integrated care programmes that were regarded as promising in their countries. The programmes were carefully selected based on the findings of an international scoping review (Struckmann et al., 2018), national publications on previous and on-going programmes and projects, and consultation with national experts and networks (see also (Rutten-van Mölken et al., 2018)). The programmes differed in aims, target population, scope, focus, maturity and context which provided opportunities to unravel overarching mechanisms for the implementation of integrated care. Because the programmes were analysed as part of the SELFIE project, we were able to provide in-depth insights into the implementation processes of integration. However, our 17 case studies might not be exemplary for all integrated care programmes because they over-represent successful implementation initiatives. Success was defined according to the selection criteria for the SELFIE projects: an on-going status of the programme for at least another two years, and required to have a formalized status (of any form) and provide care to a minimum of 100 people. Additionally, most programmes that were selected were already beyond the early stages of implementation and had reached some level of maturity. This can also be considered a strength of a study aiming to identify mechanisms behind successful implementation.

The thick descriptions of the 17 integrated care programmes that were analysed in this study were based on numerous documents and interviews with 233 different stakeholders The thick descriptions were originally written to understand the details of the integrated care programmes more broadly, however, they did include a specific section about the implementation process, barriers to implementation and the strategies that were applied to overcome them. By going through an iterative cycle of analysing the thick descriptions and asking further questions about implementation to the national SELFIE teams, we were able to more fully understand the implementation strategies and derive the underlying working mechanisms. However, we were not able to explore the interdependencies of these mechanisms in detail.

4.2. Implications for stakeholders of integrated care

The identified mechanisms and change management strategies reveal important implications for integrated care. Engagement in alignment work should be facilitated extensively and continuously. Our study shows that alignment work is the overarching mechanism and driving force of other mechanisms of integrated care. Much of the alignment takes place at the meso-level. Therefore, organisations should facilitate professionals who align the different components of integrated care, for example by developing new roles such as care coordinators and case managers. Moreover, organisations, networks and (local) government should engage in the alignment between the different levels by assigning alignment workers. This could be an important accelerator for integration, in particular when they are able to translate the macro level policy into organisational change and actively influence the macro context. This alignment is a continuous process and should be facilitated in the process of incrementally implementing integrated care.

Furthermore, a wide range of stakeholders who are active at different levels should be actively engaged and be aligned in the mission to realise integrated care. Patients and informal caregivers should become active partners in the care process but also in the implementation of integrated care in the community. Payers should also be involved in the process of collaborative governance. Investing in long lasting relationships with the providers of integrated care and secure long-term contracts for more sustainable integrated care is important. Policy makers should create a more enabling macro environment since the macro-level could be an implementation barrier, for example in relation to financing and technology. Researchers should not only be involved in outcomes measurement but also in the development and, implementation of integrated care. In future research, researchers should also gain more insight into the interdependency between the mechanisms of integrated care and how the mechanisms should be prioritized for successful incremental implementation of integrated care.

5. Conclusion

The ten mechanisms contributing to successful implementation of integrated care that were identified in this study provide a solid evidence-based foundation for the future implementation of integrated care programmes for persons with multi-morbidity. These mechanisms and corresponding implementation strategies can be seen as overarching lessons on implementation which are applicable in different local, regional and national contexts. Aligning implementation strategies across the six components of integrated care and the three levels of the health and social care system is a prerequisite for the successful implementation of integrated care.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.socscimed.2021.113728.

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