Ellen Nolte, Anne Frølich, Helmut Hildebrandt, Alexander Pimperl, Guy J Schulpen, Hubertus JM Vrijhoef

Implementing integrated care: a synthesis of experiences in three European countries

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Implementing integrated care: a synthesis of experiences in three European countries

Abstract

Many countries are experimenting with new models to better integrate care; yet, innovative care models are often implemented as time-limited, localised projects with limited impact on service delivery more broadly. This paper seeks to understand the processes behind successful projects that achieved some form of 'routinisation' and informed system-wide integrated care strategies. It draws on detailed case studies of successful integrated care experiments: the 'Integrated effort for people living with chronic diseases' project in Denmark, the Gesundes Kinzigtal network in Germany, and Zio, a care group in the Maastricht region in the Netherlands. It explores how they were developed, implemented and sustained, and how they impacted the wider system context.

All three models implicitly or explicitly adopted processes shown to be conducive to the dissemination of innovations, including dedicated time and resources, support and advocacy, leadership and management, stakeholder involvement, communication and networks, adaptation to local context, and feedback. Each showed robust evidence of improvements on a number of service and patient outcomes and these findings were central to their wider impacts, shaping country-wide integrated care polices. However, the further dissemination of projects occurred in an incremental and somewhat haphazard way. To further redesign health and social care a more formal strategy, alongside resources, may thus be needed to provide funders and providers with genuine incentives to invest in new 'business' models of care. There remains a crucial need for better understanding of specific local conditions that influence implementation and sustainability to enable translation to other contexts and settings.

Keywords

Integrated care, implementation, diffusion of innovation, organised care, Europe

Running title: Implementing integrated care

Introduction

One of the core challenges facing health systems is the rapid rise in the number of people with multiple health and care needs. This, in combination with population ageing and increasing frailty at old age, requires a rethinking of health and care services that can bridge the boundaries between professions, providers and institutions and so provide appropriate support to people with long-standing health problems.[1]

In Europe, countries have sought to create a regulatory and policy framework to promote better care integration and improve coordination between sectors and levels of care.[2] Systems have tended to focus on implementing strategies within existing service structures while more innovative care models that perhaps challenge established ways of organising services are often implemented as time-limited pilot or small scale, localised projects.[3] There is however a small number of projects that have expanded beyond the initial stages, achieving some form of 'routinisation' within the system or informing coordinated care approaches across the country more widely.

This paper examines three such pilots in respectively Denmark, Germany and the Netherlands, seeking to understand how they were developed, implemented and sustained, and how they impacted the wider system context. It draws on detailed case studies of the 'Integrated effort for people living with chronic diseases' (SIKS) project in Copenhagen[4], the Gesundes ('healthy') Kinzigtal integrated care network in Germany [5], and Zio, a care group in the Maastricht region in the Netherlands[6], which were conducted as part of a World Bank project.[7] The selection of case studies was informed by earlier work of the authors[3], and case studies followed a structured data collection template.[7] We first set out the general health system context within which the pilots have evolved and then synthesise the main observations from the detailed case studies of integrated care as they relate to (i) design features, (ii) financing arrangements, (iii) organisational structures and processes, (iv) implementation, and (v) outcomes and impacts. We conclude by drawing lessons from the case studies for the further dissemination of integrated care.

Health system context

Denmark, Germany and the Netherlands provide universal and reasonably equitable access to healthcare for their population. They are financed primarily through taxation (Denmark) or statutory health insurance (SHI) (Germany, the Netherlands), and have similar levels of health spending in terms of percentage of national income, at 10-11 per cent in 2013 (OECD average: 8.9%) (Appendix A).[8] The three countries vary however in relation to health care governance structures and organisation. Thus, Denmark and Germany have devolved administrative and political responsibility fully or in part to local and regional authorities or federal states. In Germany and the Netherlands, corporate actors (e.g. insurers, providers) also play an important role in governing the health system.

The general practitioner (GP) typically serves as the first point of contact for non-urgent care in all three systems. Denmark and the Netherlands operate a system of GP patient registration and offer choice of a GP (although restricted to within geographical areas in Denmark), who controls access to most specialist care in non-urgent cases.[9, 10] In Germany, patients can see any general practitioner; they also have direct access to medical specialists outside hospital.[11] Voluntary GP gatekeeping has been in place since 2004, but only about 20 per cent of eligible population have opted for this.[12] Care fragmentation, along with overall substandard levels of quality of care delivered to those with chronic care needs has been a main concern in all three countries, and this has prompted a series of regulatory measures and policy initiatives, although the pace, breadth and depth with which these have been implemented has varied (Appendix B).[3]

Developing and implementing integrated care: the Danish SIKS project, Gesundes Kinzigtal in Germany and the Maastricht care group Zio

Table 1 presents a summary overview of the key features of integrated care approaches in Denmark, Germany and the Netherlands.

Table 1 about here

Design features

While evolving against a similar background of shortcomings posed by the existing service delivery system, the three approaches vary in terms of specific aims and objectives, populations targeted and the range and number of providers involved. For example, the SIKS project was set up as a research project that operated from April 2005 to September 2007 in Copenhagen.[4, 13] Funded by the Ministry of Interior and Health, it focused on the implementation of rehabilitation programmes for people with type 2 diabetes, COPD, heart disease or with balance problems following falls, requiring close collaboration between a local health care centre, a local hospital, and GPs. The target population was the resident population of the Østerbro district of Copenhagen, with around 700 patients receiving services over the duration of the project (Table 1). As a research project, the SIKS model was completed in 2007, but the interventions implemented as part of the project informed the development of similar integrated care models elsewhere in the country as well as policy development for coordinated care approaches in Denmark more widely (see below).

The Gesundes Kinzigtal integrated care approach was set up in 2005 as a pilot project on the initiative of a local physicians' network in the Kinzigtal region in southwestern Germany, and a health care management company.[5] It sought to develop a regional healthcare delivery system that provides value for money through producing better outcomes, improved quality of care and enhanced patient experience for the resources spent. It is financed by two regional SHI funds through an arrangement made possible by the 2004 health care reform, which enabled SHI funds to designate financial resources for selective contracting with single providers or networks of providers until 2008.[11] The Kinzigtal approach targets the entire population in the region, and by the end of 2014, about one-third of the eligible SHI population had signed up. It coordinates about 160 partners, mostly office-based physicians, as well as hospitals, nursing homes, home care services and others. SHI members enrolling in the programme maintain choice of provider and can leave at the end of each quarter. A key design feature is a shared savings contract between the contracting partners, which we discuss below.[14]

Similar to Gesundes Kinzigtal, the care group Zio in the Maastricht region in the Netherlands has its origins in a pilot project that was established by the Maastricht University Medical Centre in 1996, and

which used specialised diabetes nurses to reduce the number of diabetes patients seen by medical specialists in outpatient settings.[15] Demonstrating beneficial effects in terms of process and outcome measures, the pilot was developed further into the Matador programme in 2000[16], and by 2006, about 70% of GPs in the Maastricht region participated in the programme. In 2008, Matador was eventually transformed into the primary care group Zio, which covers a broader spectrum of conditions. The health insurer VGZ acts as principal contractor for the diabetes type 2 programme in the Maastricht region, on the basis of a bundled payment contract (see below). From 2008 onwards similar programmes were developed for patients with asthma, COPD, cardiovascular diseases, mental health problems, and frail elderly.[17]

While varying with regard to specific aims and objectives as well as breadth and depth of the individual care model, the three approaches share certain commonalities. They all build on the chronic care model[18], and they seek to shift care from hospital into primary care and the community (Table 2). The Maastricht care group approach explicitly adopted the principle of substitution of tasks and roles, in which the GP are by default responsible for stable diabetes patients (replacing the specialist in internal medicine), and the practice nurses and diabetes nurse specialists take on specific tasks traditionally performed by the GP or the specialist in internal medicine, respectively.[6]

Table 2 about here

Patient-centredness is at the core of each of the three care models, with all incorporating a systematic approach to patient self-management support, shared decision-making and the development of care plans tailored to individuals' needs and preferences. Approaches also use some form of risk stratification to allocate patients to the appropriate level of care and decisions are supported by the use of evidence-based and integrated care guidelines. Models further permit the sharing of patient information across different provider levels using electronic medical records. All three approaches draw on multidisciplinary teams and seek to systematically collect and analyse data to measure quality and monitor provider performance to inform improvement efforts.

Financing arrangements

The SIKS project was established within the financing context of 'usual care' and it did not foresee specific incentives for partners collaborating in the project.[4] Gesundes Kinzigtal and the Zio care group have established contractual relations between collaborating partners which include performance agreements (see below). Both approaches also include specific payment mechanisms that allow for budgetary flexibility across provider levels.

Gesundes Kinzigtal is coordinated and managed by a regional integrated care management company ('Gesundes Kinzigtal GmbH') that brings together the aforementioned local physicians' network and health care company.[5] The management company oversees the health care budget for all SHI members of the two SHI funds, with start-up funding of about €4 million used to set up management, quality control, evaluation projects and additional services. Comprehensive integrated care services are offered only to those enrolled in programme although some services are accessible to all SHI members in the region, such as seminars or occupational health services. Health care providers are reimbursed as under usual care, with additional payments for time spent on patient activation programmes and upgrading of IT infrastructure; providers also receive a share of the company's profit through a shareholder arrangement. Additional payments comprise 10-15% of providers' other income. Profit is derived solely from realised savings relative to the average risk adjusted costs of care, shared between the management company and the SHI funds on the basis of a negotiated shared savings contract. As a for-profit company, the Gesundes Kinzigtal GmbH may reinvest its profit into additional preventive programmes or health promotion facilities or distribute it as part of the profit to its shareholders as above.

The Maastricht care group Zio, as any other care group in the Netherlands, is a legal entity. A care group primarily comprises of primary care providers; it enters into contracts with health insurers to coordinate and provide high quality chronic care in a specified region.[17] Zio negotiates with the health insurers the content and price of, for example, the diabetes care package for all patients diagnosed with type 2 diabetes in the region who are under the care of a GP or internist. The agreements are captured in a diabetes diagnosis-treatment-combination (DBC), which defines the precise nature of

care to be reimbursed, from diagnosis to the (possible) resultant treatment, along with referral pathways. All care components included in the DBC are covered by the bundled fee that is negotiated between the health insurer and the care group. This makes it possible to purchase care as a 'single product', even though components are delivered by different health care providers in a range of settings. The care group holds sub-contracts with other partners for the delivery of services not provided by the group. The DBC and sub-contracts include performance agreements to encourage the delivery of high quality and cost-efficient care. The care group also negotiates with specialists at the local hospital for consultations provided in secondary care; however, financing of secondary care is (as yet) not included in the bundled payment but paid for separately.

Organisational structures and processes

Table 3 provides a summary overview of some of the main features of organisational structures and processes of the three integrated care approaches.

Table 3 about here

All three approaches were guided by a policy framework, which included a strategy or mission statement, a document detailing the planning or design of the care model, and, importantly perhaps, a dedicated design and implementation team alongside start-up funding to strengthen capabilities and readiness. Each put in place governance mechanisms to ensure adherence to service requirements specific to the individual approach. In the case of Gesundes Kinzigtal and the Maastricht care group, this involved the conclusion of formal contracts between participating providers or provider organisations that set out performance agreements; governance arrangement also include the use of sanctions for breaching processes and procedures. The Danish SIKS project did not use a formal contracting model; instead it set up a dedicated leadership and management structure to oversee the development and implementation of the rehabilitation programmes across the three participating organisations. The actual rehabilitation programmes were considered as 'formal agreements' by the management and leadership and among health professionals within and between organisations.[4]

The governance and management mechanisms implemented by individual care models were seen, in part, to offset a perceived low degree of administrative and organisational integration observed for the SIKS project and Gesundes Kinzigtal (Table 3). In both cases, this 'lack' of actual integration was attributed to the wider system context within which the respective care model was implemented, such as the division of responsibilities for primary, hospital and rehabilitation care between the regions and municipalities in Denmark.[4] However both approaches demonstrate that it is still possible to achieve a form of 'virtual' integration at the administrative or organisational level where 'true' integration is not (yet) possible because of the external regulatory and policy environment. Conversely, the Dutch approach to creating care groups is seen to have been successful in achieving administrative integration and, to a lesser degree perhaps, organisational integration.[6] However, the integration effort has so far been limited to the horizontal level, by integrating primary care providers that are part of a care group, strengthened by means of the bundled payment mechanism. Secondary care is not yet part of the bundled payment and the degree of organizational integration between the care group and the hospital has remained low.

Implementation

Considering the actual implementation process, each of the integrated care models reviewed here identified a range of facilitators that were believed to promote integration efforts but they also described aspects, which, while not necessarily hindering successful implementation, were seen to slow down the overall process.

Evidence from research on the diffusion of innovation highlights a number of factors found to be conducive to implementation: dedicated time and resources; support and advocacy; leadership and management; stakeholder involvement; intraorganisational communication; interorganisational networks; adaptation to local context; and feedback.[19] All of these factors are reflected in the implementation efforts reported by the three integrated care approaches although their relative importance in supporting the implementation process varied, mirroring the starting point and the complexity of the care model to be implemented.

As noted, each approach established a dedicated design and implementation team to guide implementation of the respective project (Table 3). In the case of Gesundes Kinzigtal, this also involved drawing on the evidence of comparable experiments elsewhere to inform implementation.[5] The SIKS project used existing conceptual frameworks such as the chronic care model[18] to support the development of new management practices and enhance those already in place to promote integrated care.[4] All three models were also able to draw on upfront funding to strengthen capabilities and readiness, although, with the possible exception of the Maastricht care group, the case studies did not explicitly refer to start-up funding as a key factor that facilitated implementation.

Support and advocacy, coupled with leadership and management were seen to be core to the implementation of the integrated care model in each of the three systems, with for example the SIKS project highlighting the key role of the executive leadership of each of the three organisations (the hospital, GP representatives and the City of Copenhagen representing the municipal health care centre) in overseeing integrated service delivery through regular meetings to sustain the development and implementation of the rehabilitation programmes (Table 3). Setting up adequate leadership and management structures were also seen to be key to build trust among participating organisations. The Gesundes Kinzigtal experience highlighted however that while trust among partners was a necessary condition, it was not seen to be sufficient to guarantee successful implementation.[5] Here, the role of contractual arrangements that support the creation of a 'secure' environment with clear roles and responsibilities, allocation of tasks and possible long-term gains for all participating providers was perceived to be vital for the sustainable implementation of the new care model.

Leadership and management structures were also seen to be important in providing support to contracting partners and so strengthen their engagement in the integrated care model. For example, the GPs involved in the Maastricht care group were reported to benefit from the care group, which represents and focuses the GPs' interests in negotiations with other parties, as well as from more practical support such as provider education, protocol development, or the facilitation of meetings between health care providers involved in the care group.[6] The Gesundes Kinzigtal experience highlighted the need to provide this type of support on a continuing basis in order to keep network participants engaged, in particular where partners remain separate organisational entities.[5]

All three integrated care models also stressed the importance of involving different stakeholders and frontline staff affected by the innovation, for example in the development of structures, guidelines and indicators in order to secure 'buy-in' from participating partners. This was seen to be particularly pertinent in order to 'win over' physicians who tended to be resistant to proposed changes in all three cases.[4-6] The active involvement of clinicians in particular has been highlighted to be critical to successful implementation of innovation in other contexts also, noting the large degree of control of health professionals in health care organisations such as primary care practices and hospitals.[20] Failure to engage them in the process is likely to hamper sustainable change. In this context, the experience of Gesundes Kinzigtal also emphasised the importance of prioritising collaboration with different providers over competition in order to achieve larger scale buy-in and, ultimately, sustainable change.[5] A similar issue was raised by the Maastricht care group, which highlighted that the collaboration between GPs and the specialists working at Maastricht University Medical Centre was possible because of differences in financing streams, so removing competition for funds between providers.[6]

All three approaches built on local relationships and local capacity, so allowing to focus on what is relevant and what works locally. However, there was recognition that where larger networks are concerned there needed to be a balance between local leadership and expertise vis-à-vis centralised functions to optimise strengths and economies of scale. This point was specifically raised by the Gesundes Kinzigtal, which for example centralised functions that do not require specific local knowledge such as data analysis, the development of a data-warehouse, or review of national and international best practices to inform guideline development, among other things, while the organisational work, the adaptation of quality guidelines to the local context and local public relation and marketing activities are the responsibility of the Gesundes Kinzigtal GmbH.[5]

At the same time, implementation of the new integrated care approaches also faced some challenges and one core factor highlighted by Gesundes Kinzigtal was that of the time that would be required for some aspects of the care model, such as guideline development (getting different stakeholders on board), the development of the financial model (developing and calculating the cost-benefit and the

additional fees for the different providers involved in providing services) or the training of staff in delivering the health programmes and engaging patients.[5] Other aspects included the need to understand the capacity of partner organisations to provide innovative care components, in particular where these have to be delivered alongside usual care, or the uptake of information technology, again coupled with the capacity to apply the new system where it is being used in addition to existing approaches. The SIKS project further highlighted challenges associated with awareness of and information about the project at different levels within partner organisations, leading to suboptimal implementation, and, possibly, performance of the intervention.[4]

Outcomes and impacts

Each of the three integrated care approaches was subject to a series of evaluations and these have shown evidence of improvements on a number of process and outcome measures, as well as selected utilisation measures. These include significant improvements on a number of intermediate outcomes such as glycaemic control, blood pressure, or body weight among patients with diabetes[21] and significantly smaller increases in the number of hospital admissions, bed days, and outpatient visits over a two year period among people with COPD in the SIKS project[22]; improvements in process measures such as guideline adherence, measures of health care utilisation, health outcomes such as a reduction in the prevalence of fractures sustained by people with osteoporosis, a reduction in the proportion of people requiring long-term care and a reduction in number of potential years of life lost in the intervention group, measures of patient satisfaction, and costs measured as relative cost savings in the Gesundes Kinzigtal[5, 23]; or the cost-effective delivery of integrated diabetes care[24] and clinically relevant improvements among patients with poorly controlled diabetes in the Maastricht programme.[25]

However, in addition to the direct impacts on service and patient outcomes, individual care models had important wider impacts. The SIKS project is reported to have influenced the way integrated care has been conceptualised in Denmark.[4] For example, the project involved the establishment of a new health care centre in the Østerbro district of Copenhagen, and after completion of the project, a similar centre, based on the SIKS model, was established in the Nørrebro district of Copenhagen. This was followed by the establishment of health care centres in other districts of Copenhagen and,

eventually, across Denmark. Furthermore, the experiences obtained in the SIKS project are seen to have crucially informed wider policy development for coordinated care approaches in Denmark and, ultimately, the introduction of regional disease management programmes.[26] The scaling up of the SIKS project was further informed by a research collaboration between the Danish health care system and Kaiser Permanente that compared important aspects of chronic care and that led to important learnings.[27, 28]

Conversely, although the Gesundes Kinzigtal integrated care model has received wide-spread attention nationally and internationally, it has so far remained 'local' in that the model has as yet to be transferred to other regions in Germany. However, this is slowly changing in that is reported interest in other regions to either directly copy the Kinzigtal model or develop similar structures both within Germany as well as other countries in Europe.[5] The journey of redesigning chronic care delivery by the Maastricht care group has been recognised nationally and internationally, seen to be exemplary mainly for three features: integration of chronic care delivery and its funding, large scale primary care provision, and the interplay between redesigning and scientific evaluation.[29]

From implementation to dissemination

In this paper we set out to understand the journey of innovative care models in three countries that have evolved from small-scale research or pilot projects challenging the established ways of organising care and that have achieved some form of 'routinisation' within the system or have informed system-wide coordinated care approaches. Perhaps not unexpectedly, we show that the wider dissemination or scaling up of successful integrated care pilots seems to have taken place in an incremental and perhaps somewhat haphazard way.

There are different ways of thinking about 'scaling up' innovative care models such as the three case studies presented here.[30] One approach is to simply enlarge the models to cover a wider catchment area or population. However, this would mean increasing the number of partners to ensure adequate service delivery for a larger population. The experience of Gesundes Kinzigtal seems to suggest that there is a limit to the maximum number of members a network can accommodate and function effectively.[5] A similar point has been brought forward in relation to care groups in the Netherlands,

arguing that a care group would require a certain minimum size (that is, number of partners) to ensure a 'critical mass' to get a programme off the ground. At the same time, the size of the group should be limited to ensure appropriate governance of the organisation. There was a notion that the 'ideal size' of the care group should be one that facilitates trust and collaboration and that is sufficiently large to present a strong voice in negotiations with health insurers.[6]

Another way of thinking about scaling up is to copy the successful model and implement elsewhere and so sustain local identity. While this appears feasible in some settings, and indeed, the SIKS project in Denmark illustrates such an approach, it raises questions of implementability in areas with a different socio-economic and demographic context, different provider mix and other local characteristics that may not be easily transferable.

The SIKS project in Denmark and the care group model in the Netherlands illustrate a further approach to scaling up: the wider dissemination of the respective models has been possible through 'allowing' for some modification of a given approach in order to enable wide-spread take-up.[31] This might mean that innovative elements may have to be adapted, it is important to note that although modifications may need to be introduced to make the programme more acceptable to different stakeholders, the wider roll-out was facilitated by supportive measures, such as the introduction of the bundled payment system for care groups in the Netherlands.[3]

In order to scale up and further redesign health and social care a more formal strategy, alongside resources, at national or perhaps even international level may be needed to provide funders and providers of services with genuine incentives to invest in new 'business' models of care. This can draw on existing evidence of proven strategies for the dissemination of evidence-based practices[32], further guided by international strategies such as the WHO's Global Strategy on People-Centred and Integrated Health Services[33] and the forthcoming Framework for Action towards Coordinated/Integrated Health Services Delivery.[34] At the same time, for any effort to elevate innovative models of service delivery that provide promising results to a level beyond pilot project or 'best practice', there is a crucial need for better understanding of specific local conditions that

influence the implementation and sustainability of a given approach, so that identified processes can be translated to other contexts and settings.[3]

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Table 1 Key features of the SIKS project, Gesundes Kinzigtal and the Maastricht diabetes care group

Objectives	*Origins*	*Target population*	*Providers involved*
SIKS project 'Integrated effort for people living with chronic diseases'			
1. To improve and strengthen efforts to meet the needs of people with chronic conditions by integrating healthcare. 2. To create a healthcare model that is transferrable to other conditions and other parts across Denmark.	Established as time-limited research project at Bispebjerg University Hospital for the period 2005-2007	People with chronic conditions (COPD, type 2 diabetes, heart disease) and older adults at risk of falls who reside in the Østerbro district of Copenhagen (67,000 residents in 2005)	Bispebjerg University Hospital, specialists, (nurses, physiotherapists, dieticians), one community health care centre in Østerbro (nurses, physiotherapists, dietician), and 52 GPs in Copenhagen.
Gesundes Kinzigtal			
To establish more efficient and organised healthcare for the residents of the Kinzigtal area through developing a pilot of a regional healthcare delivery system which provides higher degree of freedom and ownership to organise care and improve population health, stabilising or reduce cost of care and share savings, and shifting incentives to encourage producing health as a common good	Initially established as pilot project from November 2005	Generalist: the population of the Kinzigtal region that is covered by two SHI funds (33,000 [about 50% of the population in the area]); number of people enrolled: 10,190 (end of 2014)	GPs (n=27), specialists (24), paediatricians (4) psychotherapists (5), hospitals (6), pharmacies (16), allied health professionals (10), nursing homes (11), home care services (5), sports clubs (38), gyms (6), other (40; network (total: 159 cooperating partners) coordinated by management organisation
Care group in the Maastricht region			
To integrate-disease specific pathways into chronic diseases pathway through defining a common and shared vision on care delivery, developing output-based financing system, developing a chronic diseases practice protocol and implementation scheme, and systematically evaluating and monitoring the quality of chronic care.	Initially established as pilot project at Maastricht University Medical Centre in 1996, transformed into Matador disease management programme in 2000 and Zio in 2008	People with chronic diseases in the Maastricht region (population: 176,000; about 24,500 enrolled of which 8,574 diabetes, 2,308 COPD, 10,299 CVD (end of 2013)	90 GPs working in 60 GP practices and organised in one care group, 1 hospital, allied primary health care professionals

Sources: [4-6, 35]

Table 2 Selected design features and processes of the SIKS project, Gesundes Kinzigtal and the Maastricht diabetes care group

Service user involvement and support	*Delivery system design*	*Decision support*	*Information system and monitoring*
SIKS project 'Integrated effort for people living with chronic diseases'			
• Education and regular documentation of self-management needs and activities • Involvement in developing individualised treatment plans and goal setting • Access to physical exercise intervention • Provision of education and health promotion materials	• Clear definition of roles and tasks of participating health professionals • Primary care unit responsible for coordinating patient care across multiple provider settings • Multidisciplinary team supports the delivery of rehabilitation • Regular patient follow-up • Stratification of patients according to disease severity • Regular inter-organisational knowledge sharing meetings	• Evidence-based clinical guidelines developed by SIKS working groups • Defined care pathways • Regular provider education and training	• Monitoring of practice team performance • Information sharing through electronic medical record that can be accessed by participating providers • Systematic collection of clinical and other data (including service user feedback) • Use of municipal IT platform Sundhedsportalen • Providers may operate their own database
Gesundes Kinzigtal			
• Regular check-ups and risk assessments • Involvement in development of individual treatment/prevention plans and goal setting • Provision of education and health promotion materials • Representation through patient advisory board (elected in membership meetings) and a patient ombudsman	• Clearly defined roles with identified care coordinators • Primary care unit responsible for coordinating patient care across multiple provider settings • Regular patient follow-up and case management (variously provided by physician practices, social workers and case managers) • Risk stratification and case finding • Integrated provider network and designated	• Treatment guidelines for > 15 diseases • Integrated care guidelines for most of the 20 preventive, health and care initiatives • Providers and experts from the participating SHI funds collaborate in working groups develop guidelines and care pathways	• Quality management system and electronic patient records • Information sharing through electronic medical record that can be accessed by participating providers • Regular analysis of patient data using predictive modelling to identify high-cost risks and comprehensive feedback reports to management and providers • Systematic collection of service user feedback

Service user involvement and support	*Delivery system design*	*Decision support*	*Information system and monitoring*
	management organisation responsible for provider coordination		
Care group in the Maastricht region			
• Regular check-ups that include education on self-management by practice nurses / specialised diabetes nurses, depending on the level of need • Provision of education and health promotion materials	• Primary care unit responsible for coordinating patient care across multiple provider settings Stratification of patients into four regular modules plus two modules for (complex) problems • Regular patient follow-up and case management • Staff roles and responsibilities are defined	• Nationally defined standards for diabetes care and multidisciplinary care protocol • Referral criteria to other care providers with clearly stipulated criteria • Internist acts as consultant to specialised diabetes nurse on patients with (complex) problems	• Disease-specific electronic patient record contains check-up and referrals data within care programme, allows for information sharing and automatisation of care protocols, can be linked to laboratory data and functional measurements • Systematic collection of service user feedback

Sources: [3-6, 35]

Table 3 Selected features of organisational structures and processes of the SIKS project, Gesundes Kinzigtal and the Maastricht care group

	SIKS project 'Integrated effort for people living with chronic diseases'	***Gesundes Kinzigtal***	***Care group in the Maastricht region***
Policy framework			
Policy document	✓	✓	✓
Strategy or mission statement	✓	✓	✓
Detailed planning or design document	✓	✓	✓
Dedicated design and implementation team	✓	✓	✓
Upfront funding to strengthen capabilities and readiness	✓	✓	✓
Governance			
Mechanisms to ensure compliance with service requirements that are different from 'status quo'	• Cross-organisational leadership team (steering committee) at executive level across the three organisations (hospital, GPs, City of Copenhagen) overseeing integrated service delivery through regular meetings to sustain the development and implementation of the rehabilitation programme including decisions on aspects affecting the three organisations (e.g. guidelines, care pathways, management practices) • Rehabilitation programmes considered as 'formal agreements' by the management and leadership and among health professionals within and between organisations	• Integrated care management company Gesundes Kinzigtal GmbH manages network and coordinates integrated care activities • Contracts concluded with all participating providers • Biannual strategy meetings • Regular quality circles, project groups • Regular support visits by management company to network partners to enable integrated service delivery	• Compliance with service requirements is a condition for financing and membership of care group
Sanctions for breaching	No	Yes	Yes

	SIKS project 'Integrated effort for people living with chronic diseases'	***Gesundes Kinzigtal***	***Care group in the Maastricht region***
processes and procedures in integrated care model			
Performance accountability mechanism	Establishment of four working groups (one for each condition) comprised of leaders from the hospital departments and the healthcare centre, GP representatives and representatives of hospital nurses and allied health staff (physiotherapists, dieticians) to: • develop horizontally and vertically integrated health care for four chronic conditions • support the development and implementation of four rehabilitation programmes across the three organisations	• Integrated care management company Gesundes Kinzigtal GmbH holds financial accountability for all members of the two regional SHI funds of the entire region • Physicians receive performance feedback reports every quarter. The reports are also discussed in quality circles and annual meetings with the CEO of Gesundes Kinzigtal	Data collection and analysis by care group, coaching (if necessary) by quality improvement manager
Performance measurement	• Use of data to assess performance and identify opportunities for improvement in access, quality, efficiency and patient experience • Performance reports are publicly available (care provided in hospital only)	• Use of data to assess performance and identify opportunities for improvement in access, quality, efficiency and patient experience • Performance reports on aggregate data are publicly available • Systematic effort to measure costs and identify problems	• Use of data to assess performance and identify opportunities for improvement in access, quality, efficiency and patient experience • Performance reports are publicly available • Systematic effort to measure costs and identify problems
Organisational processes			
Degree of administrative integration across previously separate provider organisations or	• Low because of the administrative structure of the Danish system, with the	• Low (absent) as all providers that are part of the network remain separate	• High among primary care providers that are part of a care

	SIKS project 'Integrated effort for people living with chronic diseases'	***Gesundes Kinzigtal***	***Care group in the Maastricht region***
levels	national level setting the overall framework, the regions responsible for organising and financing hospitals and primary care and the municipalities responsible for disease prevention, health promotion and rehabilitation provided in health care centres	organisations	group • Low/growing between care group and hospital
Degree of budgetary integration across providers or provider levels	• Common budget across sector borders	• No direct budgetary integration as yet but possible budgetary integration for office-based physicians that are network members under discussion • 'Virtual' budgetary integration across sectors by means of the shared savings contracting model	• Bundled payment integrates providers horizontally; secondary care not part of the bundled payment
Degree of organisational integration across providers or provider levels	• Low degree of direct organisational integration between different organisations • 'Virtual' integration through - new management practices and enhanced communication between management and leadership of hospital departments, of the health care centre and GP representatives - collaboration between leadership teams in the three organisations in developing	• Low degree of direct organisational integration between different organisations and individual providers (e.g. office-based physicians) • 'Virtual' integration through working groups, committees (e.g. pharmaceutical committee with doctors and pharmacists in hospitals and private practices) and within programmes	• High among primary care providers and increasing between primary care and hospital: The care group has enhanced organisational integration among primary care providers and uses a network approach to coordinate with other providers in the system

	SIKS project 'Integrated effort for people living with chronic diseases'	***Gesundes Kinzigtal***	***Care group in the Maastricht region***
	rehabilitation programmes and stratification approach, and at provider level through knowledge-sharing meetings		
Communication structures and processes across providers or provider levels	• Use of established and new management practices to facilitate e.g. communication processes across sectors to implement the rehabilitation guidelines through knowledge sharing meetings, teaching programmes, and clinical guidelines	• Creation of 2.7 FTE posts dedicated to communication, incl. - Biweekly newsletter targeting all partner practices and agencies - Four-weekly team-newsletter for staff of the provider units - Biennial half- day workshop with all network partners - Biennial half- day workshop for each professional category (plus one-day workshop for physicians)	• Use of variety of structures and processes to communicate about financing, organisation, quality, innovation, etc.

Sources: [4-6, 35]