Strategic Intelligence Monitor on Personal Health Systems Phase 3 (SIMPHS3)

Cross-case analysis: models of organisation

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Abstract
This SIMPHS3 report on models of organisation aims to identify key elements of the integrated care and independent living models implemented in 23 initiatives (cases) identified across 18 regions in 14 countries - 12 EU Member States plus Israel and the US. These cases cover diverse institutional, organisational, human (in terms of people involved in launching the initiatives) and socio-economic settings which allowed us to gather evidence on a variety of contextual conditions. In spite of having looked for deployed services, and despite a very thorough approach to the selection of cases, a number of cases still have to prove their viability and full deployment is still to be realised. In addition, one case focused on pre-commercial procurement of innovation in healthcare, so as to gain understanding of this rather new approach. This case is out of the scope of the analysis presented here.
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1 Introduction

1.1 Research objectives, scope and report structure

This report on models of organisation aims to identify, based on the analysis of 23 cases developed in the SIMPHS3 project (Strategic Intelligence Monitor Personal Health Systems Phase 3), those key elements of the integrated care and independent living models implemented in the respective initiatives which have contributed to their success.

The unit of analysis for the cases was "deployed ICT-supported integrated care services", defined as health and care services provided as a standard service without the need for individuals to enrol in a pilot in order to benefit from it. In other words any individual in any area (local, regional, national) where the service is provided could be offered that service. Moreover, a deployed service also means that there is continuity of funding unlike in a pilot where service provision beyond the end date of the experiment is uncertain. This definition departs to some extent from that of Integrated Personal Health Systems (IPHS) that was the focus of an earlier project (SIMPHS2) and where the ICT component was predominant. The scope of the SIMPHS3 study is indeed more generally about integrated care and independent living, and the study shows that it would have been very difficult to identify 23 cases where the ICT component was absolutely predominant.

In order to pursue the study objective, in-depth studies of 23 cases of integrated care and independent living services were carried out across 18 regions in 14 countries - 12 EU Member States, plus Israel and the US (see Annex 1, Table 2 and Table 3) - covering diverse institutional, organisational, human (in terms of people involved in launching the initiatives) and socio-economic settings. This allowed us to gather evidence on a variety of contextual conditions. It should be noted that in spite of having followed the above definition of deployed services, and despite a very thorough approach to the selection of cases, so as to match as closely as possible this definition, a number of cases still have to prove their viability and they are still not fully deployed. In addition, one case focused on pre-commercial procurement of innovation in healthcare, so as to gain understanding of this rather new approach. This case is beyond the scope of the analysis presented here.

This report seeks to extract key findings from each of the 23 initiatives investigated, based on a comparison of the key dimensions analysed in each case. The detailed description of each initiative is provided in separate case study reports. In this introduction, we present the context and the analytical framework adopted. In Section 2, we provide an overall picture of the cases investigated. Section 3 presents an analysis of the triggers that have played a role in the various cases, while Section 4 presents the results of the cross-case analysis building on these triggers. We then discuss the implications of these results for care integration facilitators in Section 5 and draw our final conclusions in Section 6. References to the extensive literature reviewed to define the context and the analytical framework are listed in the Annex. Additional case-specific sources can be found in the various case reports.

1.2 Context

Over the past decade the need for integrated care has been debated widely in the scientific literature (Minkman et al., 2011). Societies are ageing and the number of elderly people

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1 A total of 24 cases were analysed in the SIMPHS3 research. However one case refers to the analysis of Pre-Procurement of Innovation (PPI) in Galicia (Spain), not to actual implementation of innovative solutions. It is therefore excluded from this analysis.
suffering from chronic diseases is increasing. Though in many cases, the time spent in hospital has decreased, there is an increased need for long-term care (OECD, 2011; WHO, 2010). Furthermore, in most EU Member States most elderly people prefer to live at home as long as possible (Eurobarometer, 2007), which reinforces the importance of well-organised home care, social care, and palliative care (Leichsenring & Alaszewski, 2004). Lastly, in a large number of countries, health and social care have separate legal and financial systems. This situation often leads to fragmentation, increases the complexity of the collaboration between levels and tiers of care, and as a result prevents more efficient allocation of resources (Glasby & Dickinson, 2010; Leichsenring & Alaszewski, 2004; Nies & Bergman, 2004). The aim of integrated care is therefore to reduce this fragmentation and deliver better results and care outcomes on a number of dimensions, while increasing the financial sustainability of health and social care systems. In this context, the role of ICT is self-evident since most of the integrated care processes can only happen with the support of state-of-the-art information and communication technologies (ICT) that allow effective tracking of resource utilisation and outcomes (Glasby & Dickinson, 2010; Leichsenring & Alaszewski, 2004; Lluch, 2012; Lluch & Abadie, 2013; Nies & Bergman, 2004)². Furthermore, well-known management scholars applying their perspective to healthcare recommend moving towards integrated care through: a) institutional changes (bundled reimbursement to tear down silos through a different incentive structure); supported by b) integrated ICT platforms (Porter & Teisberg, 2006, 2007). The consequences of the ageing process require tearing down boundaries and silos, such as those within the healthcare system (e.g. primary and secondary care) and between healthcare and social/long-term care. ICT can help deliver integrated services that can at the same time address broadly defined assistance and independent living needs, more strictly defined needs for remote monitoring (Telehealth) of chronic diseases, as well as prevention and wellness/fitness needs for various segments of the population including some younger age groups.

1.3 Selective review of the literature on integrated care

The concept of integrated care and of its facilitators/barriers has given rise to very diverse approaches that depend on the context of application (Armitage et al., 2009; Kodner & Kyriacou, 2000; Kodner & Spreeuwenberg, 2002; Nolte & McKee, 2008; Viktoria Stein & Rieder, 2009) and there is no consensus so far about integrated care conceptualisation. This means there is neither a unique definition nor a single analytical approach, at least in the academic literature.

A systematic review carried out by Armitage et al. (2009) identified more than 70 terms and phrases related to integration yielding about 175 definitions and concepts. The term is often used by different people with a different meaning and equated with terms such as managed care, continuity of care, care coordination, case/care management, extra-mural care, patient-centred care, shared care, transitional care and integrated delivery systems, to name the most widespread appellations (Kodner, 2009).

A recent systematic review identified 13 different analytical frameworks related with care coordination / integrated care (Van Houdt et al., 2013). Another systematic review identified

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² Increasing consensus and emerging good practices call for integrated or “connected” care enabled by ICT as the only way to provide the best personalised services to the users and ensure system sustainability and stress that ICT can help such integration (Atun R, 2004; Brandt et al., 2010; Burton et al., 2004; Burton LC et al., 2004; Codagnone, 2009; Codagnone C et al., 2011; Darkins, 2006; Darkins et al., 2008; Dorr et al., 2007; Grant, 2010; Gress et al., 2009; Loader, 2008; OECD, 2010; Ouwens et al., 2005; Piniewski et al., 2011; Porter & Teisberg, 2006, 2007; Singer et al., 2011; Young et al., 2007).
18 different methods for measuring and studying integrated care (Strandberg-Larsen & Krasnik, 2009).

The aforementioned review by Armitage et al. (2009) also found limited availability of measurement tools and indicators assessing the implementation of integrated care. Another review identified the critical health systems function and elements of integration.

Finally, a review by Suter et al. (2009) identified the principles that were frequently and consistently presented as key elements for successful integration in the reviewed scientific literature.

The following figure summarises these principles:

**Figure 1: Key drivers for integration**

- **Comprehensive services across the care continuum**
- **Patient focus**
- **Geographic coverage and rostering**
- **Standardized care delivery through interprofessional teams**
- **Performance management**
- **Information systems**
- **Organizational culture and leadership**
- **Physician integration**
- **Governance structure**
- **Financial management**

Source: (Suter et al., 2009)

1.4 **Analytical framework**

We have taken the most relevant elements from the literature and integrated them with the previous work carried out in the SIMPHS2 research (Lluch & Abadie, 2013; Villalba et al., 2013), both for the elaboration of the analytical framework and for the design of the questionnaire used for the case studies interviews. The figure below depicts the initial analytical framework that guided our data collection and analysis.
The dimensions on the inner ring are the eight facilitators identified by Villalba et al. (2013) through the qualitative analysis of 27 Telehealth, Telecare and Integrated Care projects implemented across 20 regions in eight European countries. These projects were investigated in SIMPHS2 and analysed following the ten key principles for successful health systems integration identified by Suter (2009). Eight main facilitators were identified among these key principles as necessary for successful deployment and adoption of telehealth, telecare and integrated care in European regions.

The outer ring captures the macro context including the overall health/social and policy system (supply side) and the socio-demographics and cultural factors (demand side). Therefore the inner ring represents the micro and meso dimensions of the analysis and the outer ring the macro context.

The selection of cases has been described in detail in the SIMPHS3 Report on the methodological set-up for the SIMPHS3 research³ while the data collection process and the field work have been described in the SIMPHS3 introduction report to the case studies⁴. A summary of the cases showing the diversity covered in terms of: geographical perspectives (12 EU countries, Israel and the US), health system typology and type of provider is provided in Annex 1, Table 3. An overview of the type of stakeholders interviewed for each case is presented in Table 4.

We approached the data analysis on two levels: in-depth within-case and across-cases. The eight facilitators mentioned earlier have guided this analysis.

By combining different sources, we have characterised each case as self-contained wholes with respect to the dimensions of our framework as shown in Figure 2. This analysis is presented in individual case study reports, mainly as qualitative and narrative accounts.

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2 Overall picture - Cases overview

The 23 cases considered in this analysis cover a broad range of initiatives which reach a varying degree of integration, address a variety of integrated care or independent living interventions and have been launched at local, regional or national level. Table 1 shows the main characteristics of each case along the dimensions analysed in each case report, in categories derived from the analytic framework (see Section 1).

Eleven of the cases relate to local initiatives that have been launched at municipality or city level, or at the level of a single organisation such as a hospital. Eight further cases have a regional focus and only four a national one (two in Scotland, one in Austria and one in the US).

In terms of integration, a number of cases seem to have reached a certain level of vertical integration (i.e. between different levels of care) for instance between primary and secondary care, or primary care and social care, or all of these levels. This concerns 17 out of the 23 cases studied. Seven cases have achieved horizontal integration, e.g. integration between several primary care centres.

As delivery of services is a key component of integrated care, it is not surprising to find that most cases have achieved service/clinical integration. Examples where such integration has not been achieved include ACTION, ARIA and CARTS. The first one is a stand-alone telecare application which has not been deployed as initially expected. The second relates to a very small scale example of care reorganisation where an early home tele-monitoring system has been implemented by a small number of well-selected and committed health care professionals who provide the services on a voluntary basis. As to the third, CARTS, the initiative still remained to be deployed at the time of writing, which explains the lack of impact on service integration. Besides these three initiatives, we also find two cases whose aim was to implement a pilot (DREAMING, Renewing Health) where some integration might have taken place during the project but may not have continued because of the lack of subsequent deployment.

About half the cases have further achieved functional integration, which means that administrative processes have been integrated through a common infrastructure that integrates health care actors and/or at least health-related information.

Funding integration on the other hand remains an exception with only BSA, SOLE/FSE and VHA in that situation.

Furthermore 14 cases report a high degree of professional integration which often goes together with the presence of multi-disciplinary teams being set up to deliver the integrated care services, even though there is no complete overlap between the two dimensions.

Care has been reorganised in more than half of the cases (17) which confirms that integrated care requires re-thinking the organisation of care pathways. Care reorganisation often goes along with the definition of the role of a coordinator or even the creation of new roles such as case managers.
### Table 1: Overview of cases’ characteristics

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5 L= Local initiative, R= regional and N= national
As could be expected ICT and interoperability play a role in a number of cases, but in nine of them integration has been achieved regardless of ICT, or in spite of lack of interoperability. This shows that ICT supported integrated care implementation is not always motivated by a technology push but ICT are rather an underlying condition or enabler of change.

The legal framework remains a barrier for many of the experts consulted across all cases, and indeed we only found six cases where the legal framework or changes made to it played an enabling role. For instance new legislation fostering integrated care programmes implementation in Germany made initiatives like Gesundes Kinzigtal possible; the relative autonomy of health insurance funds in Israel facilitated the MOMA/Maccabi initiative; for MACVIA-LR (Languedoc Roussillon, France) an adequate legal framework for liability issues was implemented alongside the initiative. In most cases though, legal frameworks seem not to be fully adapted to the specific needs of integrated care implementation and sometimes workarounds have to be found or implementation is hampered.

Governance mechanisms have been put in place in 16 out of 23 cases and this has often acted as a facilitator of the respective initiatives. In some of the remaining cases the need to establish such a structure was sometimes identified by the experts involved, while in other cases such as in Oulu and for ETXEBEAN ONDO, existing agreements and/or strong relationships between stakeholders involved de facto provided some kind of governance framework which did not call for a dedicated new structure.

Policy commitment has been important for the implementation of 17 out of the 23 cases while national funds or investments have been made available or used in eight cases only. At the same time, some of the initiatives for which no specific funding has been made available report about an uncertain future or the lack of specific reimbursement mechanisms. Indeed only in six cases have specific reimbursement schemes been implemented (in one of those only partly) and often incentives fail to facilitate integrated care as they are not tailored for such initiatives. Some of the cases rely on the voluntary efforts of care professionals (e.g. ARIA, Getafe’s Integrated Care Programme), who do not get compensated for the extra workload the new ways of delivering care may incur. This shows that funding, financing and incentives remain an important issue which hampers the development of integrated care.

Engaged professionals play a key role in 18 of the 23 cases, and in a number of cases, the lack of engagement acted as a barrier to the development of an initiative. In addition, in nearly all cases a patient focus has been key in driving the initiative.

The brief overview presented in this section shows that integrated care can be implemented following different models. Not all components need to play the same role, and there is no single component that can explain the successful deployment of an integrated care or independent living initiative. Indeed a myriad of options exist which other regions or countries could learn from.

The next section reflects our attempt to identify the most significant elements that could become part of models of organisation for further deployment.
3 Integrated Care Deployment Triggers

3.1 Trigger matrix

As we progressed from the within-case to the across-case analysis, we realised that the further development of an initiative is determined by who launched the initiative and according to which main driver.

In other words the analysis of the collected evidence revealed the importance that the triggers of the initiative have on subsequent development. Indeed, the analysis allowed us to identify two main axes: the type of organisation which launches an initiative and the driving force that pushes to launch the initiative. We also identified the two key characteristics of each of these dimensions as summarised in Figure 3 below.

The vertical axis represents the scope of action of the actors launching the initiative (and subsequently involving other types of health and social care actors in its design and development), with the national/regional level at the top and local/single organisation level at the bottom. In the upper part of the chart we then find what could be called top-down approaches. In contrast, when the initial leadership is taken at a local level such as by a single organisation or a clinical champion for instance, we find bottom-up approaches.

The horizontal axis represents the following contrasting situations: a perceived need for technological innovation or for organisational innovation. In the first case the role of the ICT components dominates as an enabler of change that will support integrated care services while in the second case the emphasis is on the design and implementation of new ways of providing care.

It is important to stress that the four types of triggers depicted in the matrix below do not represent silos as there is a clear interaction between organisational and technological innovation. Nevertheless, the horizontal distinction simply captures the initial driving force behind the journey towards integrated care.

Figure 3: Triggers matrix
Figure 4 shows the different cases identified under each type of trigger in the above matrix and is followed by a short description of the cases that correspond to each type.

3.2 Top-down technological innovation

In this quadrant National/Regional organisations (government or care organisaiton) play a fundamental role in conceiving an initiative mainly oriented towards the design and implementation of an interoperable infrastructure which enables health care services for the whole population. The case studies that correspond to this type require a significant amount of investment in ICT infrastructures or in technology design. Four cases correspond to this situation:

- **SOLE/FSE** (Italy) is a typical case where a Regional Government (Emilia-Romagna) started the integrated care initiative with the idea of developing an interoperable infrastructure supporting health care services for the whole population of the region. Five criteria have been guiding the regional process for the deployment of e-health: regional management of ICT projects, stakeholders (doctors, citizens, suppliers) engagement, technology assets development through software integration, use of standards for medical contents, sharing clinical digital documents. The process for the development of the infrastructural platform of a computerised network that connects health care trusts and GPs/Paediatricians started in 2002. By 2006, EHR architecture model planning and deployment of online services (booking and payment) were ready. By 2009 SOLE was completely deployed for all GPs/Paediatricians, by 2010 Personal Electronic Health record was available to the whole population of the Region. Thus, the supply of integrated home care assistance in management processes started in 2010 after full deployment of the platform.
The system is deployed in a distributed way at regional level: the adopted approach was based on deploying the services firstly in a selected environment in a pilot, but with a short to mid-term perspective for scaling up at regional level.

- **OULU SELF-CARE** (Finland) was started as an IT innovation intended as a communication and support tool for patients and professionals in the Oulu municipality.
- The **Renewing Health** pilot in Austria was led by KABEG, the managing company of the five regional hospitals of Carinthia and aimed to extend the services and infrastructure required to monitor chronic patients. To integrate different Health Information Systems specific devices and software programmes were developed and a web portal and a call centre were put in place.
- **DiabMemory** (Austria) was launched by the health and innovation division of VAEB, one of the national insurance funds in Austria with a strong focus on mHealth technology to implement remote monitoring of diabetes patients.

### 3.3 Bottom-up technological innovation

This situation corresponds to initiatives driven by technology but with a local scope. Three cases illustrate this situation:

- **eTrikala** (Greece) is an example of integrated care initiative run at a municipality level based on an ICT infrastructure managed by a telecare centre that constitutes a single entry point to health and social services provision.
- **NEXES** (Spain) combines eHealth methods with integrated care models to facilitate a more effective delivery of integrated care services through a platform intended to deliver Integrated Care Services for Chronic patients based on structured intervention. Thus, this intervention envisaged both technological and organisational innovation.
- **ACTION** (Sweden) is an ICT-based self-care and family care support service which was initiated by a spin-off of the University College of Borås and is being run at municipality level. A call centre is part of the services provided.

### 3.4 Top-down organisational innovation

In this quadrant, National/Regional governments have played an important role in initiating the integrated care initiatives, which are mainly driven by organisational innovation. The case studies belonging to this quadrant have all been initiated by National/Regional governments with a certain degree of involvement of local entities in the implementation of the services in the local communities. They usually address entire populations or target groups of a population with specific diseases living on the whole national/regional territory. This type comprises the following cases:

- **SAM:BO** was initiated by the Regional Government of the Southern Region of Denmark. In this case the main driving force was organisational innovation for the provision of integrated care to the whole population.
- **SPARRA** was initiated by the Scottish Government together with the NHS-NSS with the aim to provide local Communities of Health Practices (CHPs) a risk assessment tool (SPARRA) and an Anticipatory Care Planning (ACP) methodology to redesign care pathways for chronic patients in a more personalised way. Recently, the NHS-NSS developed the "Knowledge Information Suite" (KIS) to support CHPs and the local actors in sharing patients’ information and the decisions related to the
implementation process of care pathways. The Scottish Government and NHS-NSS started the initiative at national level. However, the contribution of the local CHPs was fundamental in launching the implementation of the service on the territory.

- **TDP** was launched by the Scottish Government as a new funding scheme (namely the *Telecare Development Programme*). All integrated care cases were initiated at local level on the basis of the availability of national funds. Looking at the horizontal axis, TDP is positioned almost in the middle, between the organisational and the technological triggers. This is because the local implementation processes related to the development of an Integrated Home Care Assistance for chronic disease patients focused both on the reorganisation of the service and the implementation of home care assistive technologies, which also foresaw interoperability with the health and social care ICT systems.

- **BLMSE** was launched by the Swedish Association of Local Authorities and Regions in collaboration with the Swedish government, in the region of Scania as well as in all the other regions (county councils) of Sweden. This initiative aimed at fostering integrated care for elderly suffering from complex health conditions encouraging, strengthening and intensifying cooperation among municipalities and county councils by means of economic incentives and performance-based bonus schemes. The technological innovation consisted mainly in the implementation of an online system that allows the different stakeholders to benchmark their performance.

- **MACVIA-LR** is based on public-private partnerships that include all the health and social care stakeholders which foster integrated care in the Languedoc Roussillon region (France). This partnership is governed by a stable structure whose legal form is a foundation. The core activities of this initiative build around the concept of Living Lab where new organisational process are co-created and co-design by users and producers.

- **VHA** is the largest integrated care system in the US which provides medical and social services to veterans. Since the 1990s, the VHA has undergone a comprehensive reform imposed by the U.S. government involving structural, organisational and operational changes.

### 3.5 Bottom-up organisational innovation

This is where local private and/or public entities have a predominant role in initiating integrated care initiatives. In general terms the role of the National/Regional Authorities is marginal if not inexistent. In this group of cases the number of patients/citizens covered is much more limited than in the previous two types. The cases included here are:

- **PDTA.** This is a typical integrated care service driven approach that was launched by the Local Health Authority of Brescia, a local public entity operating in one of the provinces of the Lombardy region (Italy). The driving idea was certainly related to the development of an integrated care service for chronic patients with particular attention to those with dementia, including Alzheimer. The focus was the development of an Anticipatory Care Planning process, including standardized procedures for patient screening and for the monitoring of personalised care pathways, agreed with all the local health care actors.

- **GESUNDES KINZIGTAL.** In this case a private company and the local consortium of General Practitioners (GPs) started the initiative in the Kinzigtal region (Baden Württemberg, Germany). The driving idea behind this initiative was the development
of patient-oriented care services for disease prevention and early detection, and the use of ICT components to support this new care process.

- **ARIA.** This is another example of Integrated Care initiative started by local entities (Emilia Romagna, Italy). In this case the driving idea was the development of an integrated care service for chronic obstructive pulmonary disease (COPD) patients to reduce the risk of re-hospitalisation and increase the quality of home care services. Few technological elements were at the basis of the initial idea, and they related mainly to the management of the telecare services to monitor the involved patients on a daily basis.

- **INAA.** This initiative led by a municipality (Twente, the Netherlands) aims at re-organising service provision and ensuring cooperation between the different tiers of care (health and social care) so as to facilitate access to health and social care services for the elderly. The organisational innovation in this case is about the transition from fragmented reactive disease management to preventive personalised services supported by a proactive team of (informal) caregivers and health professionals.

- **ETXEAN ONDO.** This initiative, run at a local level but funded by the regional government of the Basque Country (Spain), has been designed to provide highly patient-centred care to the elderly, including self-management strategies and tools for health prevention and promotion. The organisational innovation relates to the new role assigned to the social care workers as case manager within the social system, enabling them to coordinate all aspects of the social services provision.

- **BSA** is an integrated private health and social care organisation funded entirely by public capital. It manages secondary and primary care as well as social care covering the entire population of Badalona, a district of Barcelona (Spain). This full integrated care approach has been pushed by a combination of organisational and technological innovation triggers.

- **MOMA/Maccabi** (Israel) is a care model based on a multidisciplinary 24/7 advanced technology call centre for treatment of various chronic diseases. It was established by one of the four health funds providing universal healthcare services in Israel.

- **CARTS** (Ireland) is a screening, triage, assessment and treatment intervention to reduce risk of frailty and adverse outcomes among older adults living in the community.

- **DREAMING** was a large scale EU-funded pilot project aiming to demonstrate new services to support independent living of elderly people. It was implemented by the Innovation Unit of the Barbastro Healthcare Area in the region of Aragon (Spain).

- **Getafe's integrated care programme for older in- and out-patients** (Spain) is a case of integrated care service provision for older patients at high risk of functional decline, institutionalisation, and hospitalisation, at home or in residential care settings, initiated and managed by the Getafe University Hospital.
4 Models of organisation

Steps in the analysis

This section is based on the 23 initiatives described above and provides a qualitative descriptive analysis which aims to identify key elements relating to the organisation of the initiatives which have played a role in achieving integrated healthcare provision.

The grouping of the initiatives according to the four ‘triggers’ identified in chapter 3 serves as a starting point. The rationale for this is that the ‘trigger’ of an initiative determines the specific profile of that initiative, in terms of objectives, organisation, facilitators and barriers. In this analysis we therefore aim to identify common elements of models of organisation for each of the four ‘triggers’.

For each of the four categories, we examine the cases according to the following dimensions, which are combinations of the dimensions of analysis identified in the analytic framework: 1. governance and policy; 2. care organisation and integration through ICT; 3. business models, funding and incentives; 4. deployment level and impact.

With respect to governance and policy, we examine to which extent the governance is organised in order to achieve the goals of the initiative and how firmly the goals and the approach are embedded in formal policy.

Regarding care organisation and integration through ICT, the analysis focusses on the actual integration activities. This includes the exploration of the type of integration (e.g. at organisational level, or at the level of care provision) and the activities undertaken to achieve this. It also includes an analysis for each case of the extent to which ICT solutions were used. The challenge of care organisation in integrated care is putting the patient at the heart of the care process to avoid fragmentation in care provision.

Concerning business models, funding and incentives we analysed if a business model has been defined and used and whether financing schemes are used to achieve the integration of care delivery. Funding in relation to integrated care may include: the funding of projects, the sustained funding of integrated care, and financial incentives to close the gaps between different care levels. In general, financial mechanisms are an important factor to promote the integration of care. The sustainability of implementation of new practices in routine healthcare delivery can be enhanced by dedicated funding schemes.

Deployment level and impact relate to the actual effect of the initiative. This is a combination of the scale of deployment and the impact of the interventions. The scale of deployment can for example be assessed by exploring the size of the target population and the regional spread of the initiative. The impact may depend on the deployment scale but also on the actual changes to the care delivery process produced by the initiative.

4.1 Top-down technological innovation

Out of the 23 case, only four – Oulu Self-Care, SOLE/FSE, Renewing Health and DiabMemory - belong to this quadrant. In total, there are seven initiatives triggered by technology, four driven by top-down and three by bottom-up forces (see Figure 4). In most initiatives integrated care is therefore not triggered by a technology push. Despite the limited number of initiatives concerned, technology is still an important driver for integrated care and can, under the right conditions, lead to successful integration of healthcare provision. In order to be effective, technology-driven initiatives require an
adequate policy context and access of patients and healthcare providers to ICT, such as internet connections, personal computers or smart phones.

### 4.1.1 Governance and policy

The cases considered here show different approaches to governance which stem from the way each initiative was born and the different policy contexts in which they were launched. The initial driving force was industry in one case, and a public organisation in the other three cases:

- The driving force behind **Oulu Self-Care** was a consortium of industries which approached the Oulu municipality to propose the creation of a citizen’s portal in 2004. This was met by a positive attitude from the municipality which had set itself the goal of becoming a pioneer in the development and use of citizen-centred technological well-being products. The city of Oulu is characterised by a very strong technology culture which originated in the 80s with the telecom boom. The openness to ICT innovation and the interest in fostering well-being products for its citizens led the municipality to create public-private partnerships to develop the Oulu Self-Care services.

- In contrast, in the **SOLE/FSE** case, it is the regional government which took the initiative to set up a regional technological infrastructure which provided a large amount of telematics services for supporting integrated care. The region secured significant funding to ensure continuity of the initiative and involved about 4,400,000 citizens, 3,700 GPs/Paediatricians, 1,000 pharmacies, 13 Public Health Authorities, 22 healthcare private companies, 16 different software for GPs’ medical records and 55 ICT providers.

- As to **Renewing Health** in Austria, whose aim was to establish a permanent infrastructure and an integrated treatment process for diabetes and COPD using integrated electronic systems, it is the managing company of the five regional hospitals which took the lead, recruited all stakeholders and coordinated the initiative.

- In **DiabMemory**, the insurance company VAEB has been the main driving force of the initiative which was based on the close cooperation of several key stakeholders under VAEB’s leadership.

In the three initiatives led by a public organisation, a specific governance model was implemented:

In the **SOLE/FSE** case, a governance structure was put in place by the region, promoter and founder of the initiative, which sought to include all relevant actors (in-house company, regional health authority, GPs and paediatricians, hospital specialists and social care actors). A similar approach was taken by KABEG (**Renewing Health**) which defined the governance model and the processes to be followed by all stakeholders as well as the role of each professional involved. Key stakeholders included technology providers, the Carinthia State, nurses, doctors and specialists, social care, the Ministry of Health and Insurance companies. The legal framework did not have to be modified to implement the project since the Austrian legal system already supported eHealth activities although some issues still need resolving (cooperation between tiers of care, patient safety). The project further received strong support from policy makers. In **DiabMemory**, several organisations were also involved under the leadership of VAEB, such as GPs, a technology institute, a public health authority and a consultancy.
The only initiative that did not establish any specific governance model is the Oulu Self-Care Services Platform initiated by industry. However the organisational context shaped the diffusion of the innovation among the health care actors. In other words, a specific governance model may not have been necessary because of the specific context in the Oulu municipality.

In all cases, we find one organisation (municipality services in Oulu, the region in Emilia Romagna, a hospital management company in Carinthia and an insurance company in Austria) actively promoting the use of a technology solution and the related services among potential users.

These examples show that the efforts of the lead organisation to promote the initiative and to coordinate other stakeholders have been crucial for deployment and that a specific governance structure was established in most cases. In addition, the political climate is also an important determinant of the further deployment of the initiative.

4.1.2 Care organisation and integration through ICT

Care organisation is an important dimension of integrated care and often the implementation of technological innovation goes hand in hand with (re-)organisation of care pathways and the creation of new roles and activities. In the case of Oulu Self-Care, in spite of the reorganisation of the governmental department in charge of social and health care no organisational change was introduced at the level of service delivery. As a result, the care re-organisation was not sufficient to facilitate the integration of primary care and specialist care or to ensure cooperation between health and social care. The lack of integration may be a consequence of the technology push that characterises this initiative, in which attention to care organisation has not been the primary focus. On the other hand, changes in law and care processes which were under discussion in the Finnish Parliament at the time of writing were expected to lead to further care integration through the merging of social, primary health care, secondary health care and specialised care services. These changes aim to create a truly citizen-centred environment of services, unleash as many resources as possible and support the efficient delivery of services. This shows that after promoting technological innovation and the use of the services provided on the Oulu Self Care platform, the need for further policy push has been recognised.

The Oulu Self-Care platform enables the interaction between patients, primary care nurses and general practitioners and offers decision support tools. What has been achieved through the Oulu Self-Care platform is some functional integration together with professional integration, as nurses and GPs for instance collaborate through the platform in new ways. However, there is no actual integration between primary, secondary and/or social care in spite of the merging of health and social care departments which happened in parallel to the development of the Oulu Self-Care platform.

Perhaps because of the lack of care re-organisation and service integration, health professionals found it difficult to integrate the digital services in their practice. While this problem was overcome by the development of targeted training strategies, it shows that introducing a technology without involving care professionals early on in the design phase may not be sufficiently conducive to care integration.

In the case of SOLE/FSE, the infrastructure developed encompasses all the stakeholders of the region’s health system, enabling better cooperation of all actors through continuous information-sharing and therefore cooperation between tiers of care. GPs act as a key coordinator to integrate health care delivery. The technological innovation has been
deployed in parallel with a reorganisation of the services to ensure cooperation between tiers of care facilitating patients’ access to the continuum of care. This has fostered a patient-centred approach supported by the possibility for patients to access their medical records so as to be engaged and empowered in the care process.

The strategy in the SOLE/FSE case consisted in developing the technological infrastructure which enables the health services and then promoting the deployment of health services. In other words, the SOLE/FSE infrastructure is a technological layer that can be adapted to every organisational process underpinning integrated healthcare services. SOLE is available across the whole region. The deployment of the care services with SOLE/FSE started in the launch phase with medium-large pilots but it will eventually address the entire population of Emilia-Romagna in the short to medium term. Nevertheless, integration between primary and secondary care as well as between health and social care has been achieved, at least in the case where health services have been implemented through the SOLE/FSE platform.

In Carinthia, KABEG had already developed their own Health Information System in the three hospitals under their responsibility prior to the start of Renewing Health. In order to support the flow of information among the different organisations involved in the project, KABEG developed guidelines on communication and cooperation between nurses and GPs. Moreover, a framework was created to integrate different Health Information Systems and different services. A common Disease Management Process (DMP) was also developed in collaboration with health professionals. This new DMP affected established protocols and standard organisational procedures. KABEG also modified the communication processes both internally and with patients. All communications were supported through an internal Internet-based network, a call centre and SMS (reminder for patients). Although KABEG’s idea is to scale up their HIS and electronic network to the whole Austrian hospital health care system, for the lifespan of the project, the integration achieved was mainly information sharing between the three hospitals and between the other professionals and institutions, and a clear definition of responsibilities amongst professionals.

The implementation of the DiabMemory system made it necessary to create new roles in the health care provision process but no new staff was hired which increased the workload of existing staff. These tasks include patient recruitment, training and helpdesk duties at the rehabilitation facility. Physicians in secondary care commit through contract with VAEB to reviewing the data of all their patients participating in the DiabMemory initiative and sending them feedback on a weekly basis. All data gathered by the DiabMemory system are stored in a proprietary database and there is currently no active connection with any other health data repositories, although the solution has been developed based on existing standards to allow interoperability, e.g. with GPs’ software. Once a patient has been trained in using DiabMemory, only the patient’s GP, the physicians, the nutrition specialist and the nurses from the rehabilitation facility are involved in their remote assessment. No other tiers of healthcare are directly involved in the initiative so that if a patient visits a specialist in secondary care and wants to share the data acquired with DiabMemory, they have to print a DiabMemory report and take it with them. An interface that is interoperable with GPs’ software has been implemented but it is not used frequently. The system allows patients to enhance their self-care and to integrate self-help with the role of the GP but has not led to care integration.

In terms of care organisation, we can conclude from these cases that when technology innovation is not accompanied by care re-organisation, care integration remains difficult to achieve. Even when care re-organisation has been considered and the technology is
available throughout a whole region, deployment may still lag behind. Further if the
technology innovation does not contemplate integration of care and/or information
systems, care delivery remains fragmented and some inefficiencies remain. This may
reflect the fact that the provision of integrated care services is such a complex issue that
on the one hand it takes time to deploy and therefore one may have to wait longer to be
able to assess the impact of a technology innovation on care integration and on the other
hand, other factors that are neither related to the technology implemented nor to care
organisation may hinder deployment, such as issues around funding, incentives and the
legal framework.

4.1.3 Business models, funding and incentives

The four cases show slightly different approaches to funding of integrated care or ICT-
supported care delivery.

Funding was secured in three out of the four cases.

In the case of Oulu Self-Care, funding for the deployment of the technology-based
service was shared between the state and the city, and a competitive tendering process
took place to select the companies that would deploy the services. There were some
difficulties associated with the model of public private partnerships chosen. While the
reimbursement model of the social and health care services, based on taxes and citizens’
contributions, has not been modified, extra funding was provided for IT development.

For SOLE/FSE, funding was provided by the region for the development of the IT
infrastructure by an “in-house” company in charge of the design, development,
maintenance, provision of hardware and internet connections, and continuous improvement
of the system and the integrated care services provided. At the same time, the services
provided via the SOLE/FSE platform are reimbursed like any other care services in the
region.

In DiabMemory funding is provided by the insurance's operational structure. Nevertheless,
the consultancy involved in the DiabMemory project performed an economic and business
analysis at the very beginning and concluded that there were too many variables to build a
robust economic model.

In contrast, for Renewing Health which was co-funded by the EC, the lack of dedicated
funding for eHealth or telemonitoring activities at regional or national level hampered the
uptake of the solution after the pilot was completed. Wider implementation seems to
require adapting the legal framework to clarify financing sources. For the project duration
though, the fact that the outpatient area was fully covered by insurance companies helped
implementation, together with the strong commitment and support from the regional
government. The telemedicine services were included in the regular and universal health
package of services without additional payment, which made it easy to include patients.

In terms of incentives, in the case of SOLE/FSE, the GPs/paediatricians receive a small
amount as “coordination fee” for the use of the SOLE/FSE solution to register health care
documents (e.g. prescriptions, clinical examinations) relating to their patients. Since the
GPs/paediatricians are obliged by regional rules to use the SOLE/FSE solution, the
“coordination fee” is a fixed component of their income. More generally the reimbursement
model of the GPs and the other health care providers of the Emilia-Romagna region has
not been modified. It is based on a capitation model where healthcare professionals receive
a fixed amount of money according to standard performance parameters agreed at
national level and partially adjusted at local level. The lack of common outcome-oriented incentives schemes for care managers and health care professionals involved in the provision of SOLE/FSE based services may hinder smooth deployment.

GPs involved in DiabMemory receive a fee per patient assessed which is in line with the usual amount GPs receive in Austria for attending patients. However, because the patients managed with Diabmemory are spread all over Austria, there is a relatively low number of patients managed by one and the same GP, therefore this fee is low in relation to the monthly turnover and does not act as real incentive for GPs.

There have been no incentives in Renewing Health but the cost saving achieved was through the reduction of inpatient stays which benefits the regional and federal governments, while public insurance companies, which support inpatient care, would not see any economic improvement. This means that in order to involve the GPs, an incentives system may be needed.

In all cases, the implementation of the initiative has not affected the economic flow of the health care services provided to citizens and patients. While this may not be a problem per se, the lack of incentives for the health professional involved and the fact that no specific business case was developed are issues that would need to be addressed to foster wider implementation.

### 4.1.4 Deployment level and Impact

In two cases we see a rather long time to full deployment: in Oulu the platform was open to citizens in 2010 after deployment started in 2004 while in SOLE/FSE, the project started in 2002 and deployment was completed in 2010, after six years of development. This reflects the reality of integrated care implementation which takes years from initial ideas to actual service provision. In addition, for both DiabMemory and Renewing Health, deployment is slow and there is no critical mass of users yet which reflects the existence of strong barriers like lack of funding and incentives.

In Oulu, in spite of the efforts of the municipality to promote the use of the Oulu Self-Care platform among patients and care professionals, use among specialists and social care professionals has been lower than among primary care professionals and patients. Secondary and tertiary care do not fall completely under the responsibility of the municipality, and although they are mainly the responsibility of one department, health and social care still function as silos. The impact of the initiative in the first case is still under evaluation. Outcomes from a qualitative survey carried out in 2009 showed satisfaction among both citizens and professionals with the Oulu Self-Care service. The latter considered digital services a necessary component of health care services, which may be another expression of the culture of innovation that characterises the Oulu region and its inhabitants. In terms of users, 25% of the citizens of Oulu have access to the platform but only 15% of these are active users. At the same time about 35% of professionals are active users in spite of awareness raising campaigns at regional and national level.

As SOLE/FSE was born to provide mainly telematics services, the provision of fully integrated clinical pathways is still limited. Nevertheless it has already led to a reduction in administrative burden, time savings, improved quality of care services, reduced operative and administrative costs, and prescription reduction amongst others. Based on these results and because of the potential of SOLE/FSE to support the full integration of the health care system at regional level, a major positive impact is expected in terms of efficiency and
efficacy. SOLE/FSE is also expected to improve the management of chronic disease in the long term as well as patient empowerment.

The impact of the Renewing Health project was evaluated through RCTs. For COPD patients results were inconclusive, while for diabetes patients there was a cost reduction albeit with low statistical significance. In DiabMemory there is no data on the long-term impact of the initiative on the health condition of the patients but intermediate results seem to show that the continuous use of DiabMemory helps patients to stabilise their glucose level, which has a positive impact on their health status. However, the data is neither conclusive nor statistically significant.

The level of deployment of the top-down technology-driven initiatives has not yet matched expectations, in other words much more could be achieved if further services were offered through the platforms or more users would adopt these services. This highlights once more the need to consider framework issues and barriers that may hamper deployment.

4.1.5 Conclusions

- The initiatives focus on potentially powerful tools to drive reorganisation of healthcare, but they have yet to be fully implemented.

The cases that are characterised by a top-down technological innovation trigger show that even when a technology infrastructure has been fully implemented, the reorganisation of care is not yet complete, and the expected benefits are yet to be fully realised. The types of integration achieved vary, though the type of infrastructure developed in SOLE/FSE seems to be more capable of full integration. This may be explained by the fact that SOLE/FSE is part of the region's strategy which focused clearly on care integration, while in the case of Oulu for instance, the initiative came from industry and as such did not take a global care perspective. In the case of SOLE/FSE impact is already visible and gives hope for larger benefits once more health services are integrated through the platform while in the case of Oulu Self-Care the impact still needs to be fully evaluated.

- The involvement of a strong leading authority was considered of crucial importance for success.

The absence of a specific governance structure has not hindered the implementation in Oulu, nevertheless the existing structure of care organisation needs to be adapted for further integration to happen, something that has been acknowledged by politicians and will lead to new legislation aiming at breaking remaining silos in health and social care. One lesson to be learnt is that the strong involvement of a leading authority has been key in ensuring successful implementation. In the other initiatives the strong leadership of one organisation, combined with its efforts to coordinate with key stakeholders has been an asset. Nevertheless framework conditions hamper deployment.

- Innovative reimbursement systems are yet to be defined to drive implementation.

In all cases, the services provided through the new technology are reimbursed in the same way as other services and the funding or reimbursement models have not been modified. In the case of SOLE/FSE, the system allows reimbursing the involvement of care professionals through a specific fee, but as the use of the system is compulsory this can hardly be considered an incentive. In DiabMemory the incentive level could be appropriate if there was a critical mass of users, however at the moment, the lack of users makes incentives nearly irrelevant. For Renewing Health it is the lack of clear funding schemes for eHealth
that makes actual deployment difficult. Innovative reimbursement models and incentives schemes still have to be defined.

4.2 Bottom-up technological innovation

Three cases have been triggered by technological innovation: Nexes, eTrikala and ACTION.

4.2.1 Governance and policy

In two of the cases policy support and a wide participation of stakeholders in the governance structure have played a role in the implementation of the initiative. One initiative was implemented by putting a strong governance model in place, in another one no specific governance was set up but the participation of all relevant actors was ensured through close collaboration. Finally only one initiative did not rely on strong stakeholder cooperation.

In the case of Nexes integrated care was set high on the policy agenda of both the hospital involved and the regional health system, which played a strong role in securing commitment and fostering innovation. In particular there was strong policy support from the Catalan Department of Health, as well as from the governmental institution in charge of the deployment of technologies in the health domain in Catalonia (TICSalut) which was a partner in the Nexes consortium. The Catalan Agency for Health Information, Assessment and Quality (AIAQS) also supported the analytical and evaluation work. In addition, the area selected for implementing the intervention (Eixample Esquerra, Barcelona) has traditionally been used to experiment with innovative health practices to be later deployed at a larger scale.

The Nexes governance model included a territorial health care commission in which all the institutions involved in the intervention were represented. This permanent commission was responsible for redesigning the four clinical processes targeted by the intervention and for implementation and follow-up, with the support of a technical management team. The intervention involved an emergency department, specialised care, social care, health transport, home care, pharmacy, mental health, paediatric care and an IT department.

In the case of eTrikala, several key organisations have been involved in the deployment of the initiative: the municipality of Trikala, the company in charge of running the ICT services for its citizens, the municipality’s services in charge of promoting economic, cultural and social development, the services in charge of protecting the elderly and the general hospital of Trikala. While these stakeholders work in close collaboration providing health and social care services to the elderly there is no specific organisational structure which promotes coordination across settings and levels of care. In this case, it is the municipality that acts as an enabler using eTrikala as a public technological provider undertaking which facilitates integrated care and IT infrastructure services to the entity responsible for providing the telecare centres to end-users with support from specialists from the hospital.

No specific governance structure between care organisations or levels was established to provide the ACTION service in the municipality of Borås. This may relate to the fact that ACTION is a kind of stand-alone service, even if offered as part of the social services package from the municipality. The service is provided by an external company through one year contracts signed with the municipality. The current lack of support among local politicians acts as a barrier, in addition to the fact that national Swedish policies give more emphasis to hospital care and telemedicine than to telecare services like ACTION.
4.2.2 Care organisation and care integration through ICT

The main objective of Nexes was to identify strategies for regional deployment and adoption of integrated care services supported by ICT, to move away from a hospital-centred care towards home care and service integration, by focusing on preventive care management, chronic disease management, health and social services integration and homecare management.

The Nexes key characteristics are the adoption of a model of care for chronic patients and the management of patients through programmes and standardised interventions. The patient plays an active role which is facilitated by a patient’s portal and a call centre, including tele-monitoring facilities. The care delivery model implemented through Nexes allows a more standardised application of care pathways facilitating a new organisational framework and the setting of more specific health or social goals compared to standard care. It also means the redefinition of the roles of professionals and allows better allocation of resources.

The organisational processes have been designed and supported using an open source modular platform which allows a multi-disciplinary team of health care professionals to create, exchange and adopt care programmes. Individual patients are assigned to these programmes according to their conditions and needs. These care programmes are defined as protocols consisting of predefined tasks which facilitate a case management approach. A support centre provides triage, promotes patient self-management, and manages remote monitoring.

The ICT solution has answered the need for better coordination and information sharing among professionals while the re-organisation of the services has ensured cooperation between tiers of healthcare and between health and social care.

The provision of the services is achieved through the coordination of back-office and support functions across all the units involved (functional integration). The coordination of the relations among different organisations and professionals within these organisations further contributes to service/clinical integration. Communication, information-sharing and collaboration are facilitated through coordination based on structured, inter-organisational mechanisms. On the other hand, service responsibilities and funding remain separate.

While Nexes has been characterised by technological trigger, with the creation of a specific IT platform, one of the lessons from this case is that one should focus on efficiencies of novel integrated healthcare services rather than on implementation of ICT into traditional approaches. In other words, organisational and cultural aspects of change, and the promotion of novel and flexible organisations could be more effective than IT in promoting the change and fostering deployment of integrated care.

In the eTrikala case, the care pathway is organised around the infrastructure and the telecare centre provided by the IT company owned by the municipality. Technical staff from the telecare centre visit patients registered for the service, install the equipment and provide training and assistance. The patients, their carers, social workers and GP, as well as specialists from the local hospital can access patient data, provided the patient has given consent. In addition, a home care unit with GPs, nurses, and other care professionals (e.g. physiotherapists) assist patients with handling their vital signs measurements. This set-up allows a seamless provision of care whereby the telecare centre enables better cooperation of all actors through continuous information-sharing, thus ensuring cooperation between different tiers of care. The reorganisation of the services required to fully unleash the
potential of the ICT infrastructure has not taken place yet though. All current efforts are targeted at safeguarding an acceptable level of care continuum between primary and secondary health care services supported by social care interventions. The telecare centre allows adding new processes to the existing ones with great flexibility, but the issue is rather about prioritisation and selection of processes to be implemented.

In terms of type of integration eTrikala succeeded in achieving vertical integration between primary and secondary care, as well as primary care and social care, functional integration (thanks to the dedicated telecare centre and related IT infrastructure) and service integration. The infrastructure has obviously contributed to a high level of information sharing with patient data being accessible virtually by all care actors involved in the care pathways.

Although the full integration of health and social care services at municipal level foreseen when eTrikala was initiated has not been achieved, some positive impacts have been registered thanks to the effective integration of home care provision which allows better information and hence better care delivery.

The ACTION service is installed at an older person’s home after evaluation of needs by a municipality assessor who checks compliance with specific criteria (e.g. the solution extends independent living, improves self-care, reduces isolation etc.). End-users could also request the services themselves upon advice e.g. from a care association. Broadband and equipment are then installed in the user’s home by the ACTION centre in the municipality or the organisation ACTION Caring, depending on the model chosen by the municipality. The ACTION service is currently offered on its own and not as part of a social care package. As such it does not foster nor contribute to integration. Nevertheless, during the pilot phase when the ACTION call centre was located in a central office in the municipality it seemed to improve communication between colleagues working in different care settings.

4.2.3 Business models, funding and incentives

NEXES was co-funded by the European Commission under the ICT Policy Support Programme. Beyond the EC funding, the reimbursement for the provision of integrated care services through NEXES followed the same scheme as the one used by other providers in Catalonia. The payment model in place allows financing some services or facilities tackling a recognised need which would otherwise be unsustainable or starting different facilities to reach the scale required for service provision. There are no specific incentives in the hospital budget system to foster the coordination among providers which means that the workload for professionals increased without any mechanism being available to compensate them for their involvement.

The lack of innovation in reimbursement models and the difficulties to align incentives for health professionals is one of the problems that hampered the further deployment of NEXES which resulted from the lack of national investments and funding programmes to sustain change and bear up-front costs.

As a result, the NEXES experiment shows that a business case including novel reimbursement policies and incentive schemes with shared risks arrangements among actors must be in place to ensure sustainability.

In the case of eTrikala, the reimbursement for the innovative services is based on the general reimbursement of care services, and no specific model has been developed for the eTrikala integrated care initiative. The lack of common outcome-oriented incentive schemes
for the care managers and healthcare and social care professionals involved reduces the effectiveness of care integration.

Hospital health professionals receive a contribution for their interaction with the telecare centre based on a Diagnosis Related Group model and a small fee for the coordination of cases. Healthcare providers are paid following a reimbursement model based on outcome for a limited number of cases they can accept and a small fee for coordination of cases. The social care professionals are paid by the municipality.

As reimbursement is provided as part of a national stimulus package which was bound to expire at the time of writing, eTrikala is currently struggling to maintain, let alone deploy further, its services.

As to patients, provided they are covered by a national insurance scheme, they get all their expenses reimbursed at a standard percentage, which can reach 100% depending on the severity of their condition (e.g. degenerative conditions, including Alzheimer).

The ACTION services have been suffering from the uncertainties connected to financial sustainability as many municipalities established the service on a temporary basis, using national funds, not their own operational budget. This means that at some point funding stopped. Municipalities interested in providing the ACTION service sign a contract with the provider (ACTION Caring) and pay a monthly fee per user. The costs of hardware (e.g. PC) and software are funded by the municipality separately or by the user. The latter pays for the broadband connection. Users also pay a fee as co-payment to the municipality. The remaining costs could be covered by the municipality’s own budget or other funds. The call centre costs are also borne by the municipality. The emergence of a cheaper alternative to the ACTION services also affected negatively its continuation.

4.2.4 Deployment level and Impact

In these three cases, deployment has not matched expectations. NEXES is struggling to make the transition from pilot to deployment of the new practices into routine services while in eTrikala the economic crisis and the associated budget difficulties affect further deployment. For ACTION the situation is equally complicated, with lack of stable funding.

The evaluations carried out in NEXES, some through RCT, showed clinical efficacy of the intervention on main outcome variables (e.g. sustainability of training effects over time, reduced unplanned admissions, or reduced mortality). In some of the evaluations undertaken it was also possible to demonstrate positive impact on resources use such as hospitalisation or length of stay, while in others the sample size was too small to reach such conclusions. Some of the services implemented have had a clear impact on care delivery such as the Enhanced Care for Frail Patients programme which has completely changed the ecosystem of the Pulmonary Medicine Department or the home hospitalisation programme deployed since 2006 which has brought clear benefits as opposed to conventional care.

For eTrikala, the current economic crisis makes it difficult to widen the scope of application and offer the telecare centre services to all citizens as initially foreseen. Although the services are covered by the national health insurance scheme, and hence reimbursement from a patient perspective is not an issue, the lack of funding for integrating additional care processes into the available technology platform acts as an impediment to wider deployment.
Although the full integration of health and social care services at municipal level foreseen when eTrikala was initiated has not been achieved, some positive impacts have been registered in terms of reduced hospitalisation and emergency visits, thanks to the effective integration of home care provision which allows better information and hence better care delivery. Patients’ health outcomes have also improved as well as patient satisfaction (and that of their informal carers) and quality of life, as the improved care at home enables them to stay longer in their own environment. The reduction of hospitalisation and emergency admission rates has in turn led to savings and hence more cost-effective care delivery. If the activity could be scaled up to cover more patients in Trikala or to other municipalities and other regions, greater positive impact could be expected. It should be noted that evidence for the impacts identified in eTrikala has been published in the literature, as a number of studies were performed during the participation of eTrikala S.A. as a pilot organisation to test innovative home telemonitoring services under the framework of EU funded projects.

The ACTION service was evaluated through various studies, mostly through qualitative interviews and for quantitative analysis without control group and using small samples. In spite of these limitations, the service seems to have had a positive impact on informal carers (e.g. quality of life, productivity), formal carers (e.g. reduced travelling time, improved job satisfaction), quality of care by informal carers and cost saving as a result of delayed institutionalisation for instance.

4.2.5 Conclusions

- There was no common approach regarding governance in the three bottom-up technology-driven initiatives, but a strong intrinsic motivation to collaborate on the part of involved organisations and professionals has driven the change.

One of the initiatives was supported by a strong governance model while in two others it is through close collaboration but with no specific governance structure that the initiative was implemented. This suggests that as long as there is a strong cooperation basis and a collaborative spirit among the stakeholders concerned by the initiative, integrated care can be promoted, with or without formal dedicated organisational structure. In the case of NEXES, policy support at regional level was also important for the deployment of the initiative. In the case of ACTION which has been implemented as a stand-alone solution and without a specific governance model, the lack of impact of the solutions on integration seems to make its future more uncertain.

- A professional dedicated IT service was established to drive the change of healthcare now and in the future.

In two cases, the creation of a dedicated IT company contributed to the promotion of integrated care delivery. This involves the development and maintenance of a platform and an infrastructure that includes a telecentre/support centre and facilitates the exchange of information between care actors. In these cases, the IT platforms have been developed in a flexible way so that further care processes can be added over time. Where the experiences differ is in the type of services offered and the organisation of care around the new platform. Indeed care reorganisation was an important component in NEXES, alongside the use of novel technologies, while in eTrikala, reorganisation of care has not really happened yet.
These cases show that by developing a dedicated and flexible IT infrastructure, which takes account of future needs, it is theoretically possible to scale up and include further services.

- Strong business models and incentive schemes may be needed to deploy the initiatives to its full potential.

At the same time, the above cases show that in spite of using existing reimbursement mechanisms, it has not been possible to create a business model that enables further deployment and/or full sustainability of the services offered or that provides sufficient incentives to promote the use of integrated care. This shows that a technology push, even accompanied by care re-organisation is not sufficient to promote full deployment of integrated care and that further efforts are needed on reimbursement and incentive schemes to allow for wider deployment and to benefit from the greater efficiency that care integration brings.

4.3 Top-down organisational innovation

Six cases were identified as triggered by top-down organisational innovation: SPARRA/ACP, TDP, SAM:BO, BLMSE, MACVIA–LR and VHA. Initiatives in this category have in common to have been started by a national or regional authority. In some of these initiatives the objective was to strengthen cooperation between professionals, patients and organisations, often leaving the organisation and structure of healthcare delivery intact. In others the structure of healthcare delivery has been affected by changes to the roles and tasks of professionals and organisations.

4.3.1 Governance and policy

In most of the initiatives in this section, the governance structure includes the political/policy level, healthcare organisations and professionals. Patient representatives/organisations are in general not included although these initiatives often promote a patient-centred approach. From a theoretical point of view, patients’ views on integrated care could have an added-value. Furthermore, the governance structure in general includes the regional, and often the national health authorities and different layers can be identified depending on the specific objectives of the initiatives.

The two projects in Scotland (SPARRA/ACP and TDP) are strongly embedded in the national healthcare and social care organisations within the NHS–NSS (NHS National Services Scotland). At national level the plans have been initiated, promoted and guided by the development of structures, models and tools. For the implementation at local level, different stakeholders are organised in partnerships for instance. In both cases, the Scottish government has played a key role as the promoter and founder of the initiatives. Other actors at national level include the NHS-NSS and the Joint Improvement Team (JIT), which are partnerships between various national and local actors. At local level, in both cases, the local government or local councils responsible for the social services provided to citizens, and the local NHS organisation which represents health care professionals in charge of health care service delivery have played an active role. In more advanced cases, Communities of Health Partnerships (CHPs) were also established to facilitate the integration of primary care, specialist services and social care.

In SAM:BO and BLMSE, there are also two levels of governance. While BLMSE was initiated by the national government and SAM:BO by the regional authorities, they are both managed by the regional authorities, and the implementation has in both cases been carried out in close collaboration by municipalities and local care organisations. The
Regional Government acted as promoter and catalyst of **SAM:BO**, and was also responsible for the definition of standards and procedures for integrated care. For the implementation at local level, the governance model includes the municipalities responsible for the health and social care services and the hospital(s) involved which are in charge of the operationalisation of the care pathways defined under the SAM:BO agreement, covering a number of detailed tasks and activities. In addition, National health authorities are also involved. In **BLMSE**, at regional level, ‘improvement leaders’ have driven the changes in healthcare organisations and among healthcare professionals. This process has been guided by a regional steering committee including representatives from the region and the municipalities. At local level, ‘leadership forums’ have been established to guide the local action plan with management representatives of all the kinds of organisations (hospitals, primary care and municipal care) operating within each of the 33 involved municipalities. The initiative is the result of a political decision formalised through a regional action plan for improvements and for the implementation of an agreed joint political structure (among politicians from the region and the municipalities) for management and co-operation.

The **MACVIA/LR** initiative in the Languedoc-Roussillon region adopted a slightly different approach with a more regional project structure and without any strong national guidance. To enable a stable structure, it was deemed necessary to create a dedicated organisation with the legal status of a foundation. The governance structure of MACVIA-LR includes a coordinator, leadership professionals, an executive committee and a project manager. Different stakeholders are represented in the governance structure and patients are involved through the use of Living Labs as well as through patients’ associations.

In **VHA**, which is the United States’ largest integrated health care system, a far-reaching transformation was initiated by the US government to increase efficiency and improve quality of care. Although it ultimately depends on the United States Government, the VHA works as a self-governing body that acts both as a provider and a payer, hence the transformation of care delivery was carried out by the VHA leadership.

### 4.3.2 Care organisation and integration through ICT

In the top-down initiatives with an organisational focus, structures are created to foster the actual implementation of integrated healthcare delivery. The main activities relate to the coordination and cooperation in the assessment of patients, the planning of individualised care pathways and the delivery of care. ICT solutions have been used to facilitate the communication between care actors. In nearly all cases the organisation of the care providers has not been modified, the main focus being on care coordination and cooperation in the existing healthcare structure.

The **SPARRA/ACP** initiative is an integrated care management process which starts with the assessment of patients’ risk of unplanned hospitalisation by GPs and nurses, who then together with other care actors define a personalised care pathway to avoid hospitalisation. A care manager from the Community Health Partnerships (CHP) facilitates the organisation of the meetings among the health and social care actors and the design of the patient’s care pathways with shared goals, clear task assignments and timing. Activities are monitored by the care team, while the review of the results and the revision of the periodic patient’s care plan fall under the responsibility of the CHP manager. Organisational integration among the care actors applying the SPARRA/ACP approach is still only partially achieved. However a new regulation foreseen to come into force in spring 2015 should
contribute to accelerating the process of integration by merging health and social care organisations in single entities.

In the TDP case, the aim was to shift towards more patient-centred processes by funding selected telecare projects. Integrated services among primary, secondary and social care have been implemented to guarantee continuum of care for the patients across different tiers of care. The telecare technologies made important contributions to continuously monitoring patients at home and to preventing emergency visits. In these cases, multidisciplinary teams including GPs, nurses, social care providers and social housing representatives have been set up. In the more successful initiatives mainstreamed in the local communities, CHPs played a fundamental role in ensuring cooperation between tiers of care, and they stimulated information-sharing across all actors involved in the care process management. The TDP funded telecare services initiatives promoted integration among the local health and social care actors, through clear protocols of co-operation that facilitate coordination between hospital discharge and home care service from the primary care professionals. For the Integrated Home Care management initiatives there has been no resource sharing among the actors involved in service provision.

The SAM:BO agreement provides guidelines, standards and procedures that allow municipalities and local health actors to implement more integrated care processes, by shifting from the current hospital-centred service provision to more patient-centred care. The 22 municipalities of the region play a pivotal role in the implementation of the SAM:BO agreement, especially with regard to supporting home care services and rehabilitation assistance. They also act as “quality coordinator”, fostering the interaction among the different actors. The operational role of the GPs, specialists and nurses depends on the characteristics of the care pathway implemented and the assigned tasks. Once fully operational, home care services such as cleaning or food delivery amongst other will be delivered to targeted patients. The latter will also be assigned a care coordinator from the municipality, who will help them navigate in the system and help them make lifestyle changes where necessary. In all the care pathways developed under the agreement the continuous communication and information sharing amongst the health care professionals is considered of great importance. This will be further enhanced in the future with the development of the planned Shared Care Platform whereby care actors will be able to share data from their individual systems, use the new platform to handle workflows across sectors and view data from the different caregivers.

In contrast, regular services remain largely unchanged under BLMSE. However, improvement leaders in BLMSE have played a key role in facilitating organisational change mainly through leadership forums (voluntary teams of different health and social care professionals fostering integrated care across the different health and social care providers). In addition, coordinated Individual Plans written together with a patient receiving both social care and healthcare services have improved the coordination of the contributions of various caregivers. Independently from BLMSE, the merger of primary care and hospitals under one organisation with a unified management has had a direct (positive) impact on BLMSE’s implementation. Several local arrangements have been established to deploy routines that allow joint planning of actions and cooperation for individual patients. In this way, health and social care professionals are encouraged to take account of and respect the patient’s perspective. The BLMSE approach has enhanced coordination and cooperation in healthcare service delivery but full integration has not been achieved, as
service responsibilities and budgets remain separate, and coordination and collaboration depend on local circumstances.

**MACVIA-LR** is based on a public-private partnership that includes health professionals (e.g. physicians, pharmacists, physiotherapists, nurses, others) and numerous patients’ organisations. To define the organisational processes included in MACVIA-LR, a Living Lab approach has been used, fostering co-creation, exploration (e.g. discovering emerging usages), experimentation and evaluation (assessment of concepts, products and services). One of the MACVIA interventions is being tested in a pilot to assess how a tool developed in MACVIA can facilitate integration between the different tiers of care.

Through a reform, the **VHA** system was decentralised, and regional bodies were created in order to meet local demands and to enable a proactive and fast response. Health care processes were reorganised around patients. This new paradigm required investing in health information technologies and communication standards. The reform reinforced the outpatient area and assistance at the patient’s home, aiming to lead to a larger, closer and more coordinated community-based network of care. The VHA is an example of full integration: communication, information pathways and collaboration are facilitated through coordinated, agreed and clear protocols. Although there is no specific new entity aiming to achieve integration, the VHA holistic approach to healthcare and the strength of its system guarantee the delivery and economic support for the entire continuum of care. There is also integration among professionals with interdisciplinary teams of physicians, nurses, social carers, dieticians, pharmacists, recreation therapists and physiotherapists assessing patients’ health status. Nurses play a key role linking inpatient services, outpatient visits, ambulatory care, and institution-based and home-based care, enabling smooth transition from one care level to another. The health information system used in VHA comprises over 150 tightly integrated applications including electronic health records, telemedicine, telehealth and mHealth applications.

### 4.3.3 Business models, funding and incentives

In the cases described in this section, funding has not been explicitly used to drive the integration of care. Alternative ways of funding healthcare to stimulate coordination and cooperation in care delivery have not been part of the initiatives. In general the funding was organised for the initiatives either as a separate budget (**BLMSE** and **TDP**) or as part of the existing healthcare financial system (**SAM:BO**, **MACVIA**, **SPARRA**, **VHA**). These differences reflect the different objectives of these initiatives.

The TDP initiative was dedicated to promoting projects in telecare by financing from an allocated budget. Within the first wave of funding, 51 telecare projects were supported in all communities in Scotland. In the second wave of funding, only few of them have been financially supported to become mainstreamed services.

In most initiatives, funding was not part of the innovation. In **SAM:BO**, an agreement was established on procedures and standards, but this did not include any financial element. **MACVIA-LR** and **SPARRA/ACP** are initiatives in which the regular financial mechanisms were not modified or adapted to enable better integration of care. In the **BLMSE** initiative, financing was established based on the outcome of care (performance) which may indirectly have been an incentive for the integration of care delivery. In **VHA**, the transformation of care was financed by the organisation’s budget but they promoted the removal of disincentives for integrated care instead of creating new financial incentives.
As shown in the above cases, no specific financial measures have been used as an incentive to integrate care. This could be considered a missed opportunity, but this could also imply far reaching reorganisations in healthcare which go beyond the scope of the respective initiatives.

The fact that in most initiatives financing is not project-based increases the chances of (or the hopes for) a more structural implementation of these good practices i.e. turning them into routine care services. Indeed only one of the initiatives analysed here (TDP) financed targeted projects albeit to support selected, already implemented promising projects in scaling up rather than promoting completely new developments.

The reimbursement model in the cases in this quadrant has not been modified to accommodate the respective initiative. In one case, SPARRA/ACP, the experiment has led to reviewing the existing scheme and replacing quality and productivity indicators of the emergency admission and emergency pathways by anticipatory care planning and medication review indicators. In another, MACVIA-LR, the individual components of the project are fully funded by the French social security system but the integration of MACVIA-LR in the French health system is still under discussion. In VHA, a new capitation-based global payment was established to ensure the homogeneous provision of services.

The BLMSE case is the only one which, at the time of writing foresaw the payment of a performance-based bonus for the implementation of the initiative. They consisted of predefined (national) budgets divided among the municipalities and the counties that had reached the established minimum goals within each of the areas under the agreement. In spite of this, the existing separation of organisations and budgets reduces the incentives for the various organisations involved to cooperate and coordinate their activities.

The salary of GPs in VHA also has a performance-based component, but this was not specifically developed for the purpose of promoting integrated care. It is a general feature of the economic model in VHA which links GP’s pay to the fulfilment of specific goals and performance objectives they have been assigned.

In Scotland, the current bundled payment system foresees a coordination fee for the implementation of specific activities such as SPARRA/ACP but no outcome-oriented incentives are foreseen for the care managers and health care professionals involved in the delivery process.

The case of TDP is very different from the other cases since it is a funding scheme. Since 2006, the Scottish Government allocated about £20 million to stimulate the diffusion of telecare practices across Scotland through the TDP funding allocation process. Additional funds were allocated by the Government to mainstream the most promising initiatives of the 32 local partnerships as established in the preceding period. Only 22% (6 of 32) of these were mainstreamed at the end of the funding period, which shows the limitation of the TDP approach. In terms of telecare service provision, each local community applies a different pricing policy. Weekly costs vary across Scotland, and some Councils do not levy any charge on their telecare users. The fragmentation of the telecare cost across the local communities is not only a barrier to the diffusion of common health care practice, but it also raises questions on the equality of service provision to citizens/patients across the country.
4.3.4 Deployment level, Integration and Impact

The deployment of the initiatives with a top-down organisational focus is rather well established. The interventions are often part of the current healthcare practices. One exception however, is the TDP initiative which is more a project funding scheme, with less control over deployment at a larger scale as already highlighted above.

In the two Scottish initiatives (SPARRA and TPD) several quantitative impact evaluations were carried out which showed improved healthcare outcomes and costs reduction (e.g. emergency admission reduction, reduced length of stay). SPARRA which can potentially be applied to the entire population of Scotland is currently used only for vulnerable subgroups of patients and patients with complex illnesses. For TDP, the savings are nominal only as structural changes in the health and social care systems would have to be implemented to actually reduce the number of hospital beds. For the telecare projects funded under the TDP programme some significant net savings could also be achieved in theory but remain hypothetical as long as the healthcare system structure remains unchanged. As mentioned earlier, only 22% (6 of 32) of the projects were mainstreamed at the end of the funding period which shows that other issues besides funding may impede further deployment.

Both the SAM:BO and the BLMSE initiatives have led to improved outcomes, although no counterfactual evaluation has been carried out. An assessment of regional health systems adopting SAM:BO shows how the Region of Southern Denmark has performed better in comparison to the other Danish Regions in terms of patient satisfaction and collaboration between health and social care, and between primary and secondary care. Average hospital length of stay is also lower in that region. Although this cannot be attributed directly to SAM:BO it is likely that the agreement has contributed to these results. For BLMSE, an increase in adherence to routines, protocols and guidelines has been noted. Such improvements would probably not have happened without the increased contacts and communication between the different actors involved in the BLMSE initiative such as primary care, hospitals, municipal health and social care, as well as private providers at all levels. In addition an online tool allows measuring impact through several indicators (e.g. reduction in the percentage of older citizens with inappropriate prescriptions).

In terms of deployment, the SAM:BO initiative which was developed as generic and applicable to all health care processes provided to the population in the Region of Southern Denmark, is currently implemented mainly for chronic diseases and more particularly, for vulnerable subgroups. The implementation of the agreement is still in progress.

All elements of MACVIA-LR have been implemented at least in pilot studies and are ready to be deployed in the region, in particular in more remote areas. Although the business case has not yet been evaluated, MACVIA-LR’s aim is to reduce avoidable hospitalisations in the region, and baseline data for this indicator is already available. Other indicators to be measured are Quality of Life and Frailty, and a tool to assess healthy life years is also being developed for different regions including Languedoc-Roussillon.

VHA offers integrated care services to all its veterans, which can be considered a case of full deployment. VHA carries out performance evaluations yearly and a number of evaluation studies have been undertaken over time. The results achieved by the care transformation include a decrease in hospital admission, a reduction of bed-days, increase of ambulatory care visits and improved diseases care continuum, reflected in the increase in the percentage of veterans whose chronic diseases or age-related conditions were routinely assessed. Quality of life has improved and the level of satisfaction of patients
with the system is very high. In addition specific evaluations of ICT based solutions such as telehealth (home and clinical) show significant decreases in hospitalisations, bed-days, travelling time which have led to overall cost savings.

4.3.5 Conclusions

- The initiatives are characterised by strong political and policy support to strategies promoting change towards more integrated care provision.

The initiatives with a top-down organisational focus targeted regional and national developments. In general, the objective of the initiatives was to improve the coordination and cooperation in healthcare services in order to achieve more efficient and better integrated care with a patient-centred focus. Except for VHA which underwent a far reaching reform, the objective of the other initiatives has not been to make structural changes in healthcare systems.

- In general, the initiatives are important starting points for the actual integration of healthcare delivery and have the potential to lead to changes in healthcare provision, depending on local implementation.

Regardless of the specific objectives of the initiatives, their strength is the organisation of national and regional funding and/or guidelines. In this way, the projects create the framework conditions for local initiatives to actually implement change in healthcare delivery. The governance structure in these initiatives in general seeks to secure wide acceptance and embed guidance, regulations and tools at national and regional level.

- Even if integration of healthcare provision is the main objective of the initiatives, actual implementation is not necessarily managed as part of the initiative.

A possible risk that was identified in some of these initiatives is that the local conditions which were not always part of the initiatives and not adequately managed. For example, in the SAM:BO initiative some legal issues related to privacy and security and interoperability of systems hampered effective implementation. In the SPARRA/ACP initiative, the lack of integration of funding of health and social care providers was considered a barrier. Plans at national and regional level can be used to shape the local activities, but actual integration is organised by healthcare providers at operational level.

- Not all facilitators of integrated care have been used to their full potential.

Several potentially effective tools to promote integrated care may not have been used to their full potential in the strategies developed in all initiatives. Financial incentives for integrating healthcare services e.g. through a dedicated budget was considered in only one initiative. Input from patients is also not always explicitly considered. Patients’ opinions and experience with technology would be of added-value in organising integrated care pathways. This may be linked to the difficulty of engaging specific patient organisations or to the difference in objectives between the strategic level and the local implementation level. However in the MACVIA-LR initiative, patients have been involved through ‘Living Labs’ which is a good example of how to include patients and take their needs and perceptions into account in an integrated care strategy.

- Impact evaluation

These initiatives demonstrate that the integration of care is a complex process which requires a multi-dimensional approach for effective care delivery. It would be useful to have in-depth analyses of the actual implementation related to the initiatives in this
quadrant. The impact on patient care has often not been directly analysed by the initiative and outcomes are measured based on national/regional statistics which provide a very indirect assessment of impact.

4.4 Bottom-up organisational innovation

Finally ten cases have been identified under the bottom-up organisational innovation trigger.

4.4.1 Governance and policy

In most of the cases identified in this quadrant (see Figure 4), a specific governance structure has been put in place. In around half the cases, no specific governance model has been developed, nor has the existing governance structure been modified. However a number of initiatives established strong collaboration with key stakeholders.

In **ETXEAN ONDO**, the leaders of the initiative established different formal framework agreements of collaboration with the provincial councils, municipalities, telecare services and the Primary Care Health Centres and Hospitals, in close collaboration with the Department for Employment and Social Policies. A Foundation became the central node of the initiative, working in close collaboration with all the actors involved. Beyond the formal agreements among the public bodies, there are also ongoing alliances with different stakeholders such as innovation centres, foundations for older and disabled people etc.

Likewise in the **Getafe’s Integrated Care Programme**, the Geriatrics Service of the hospital set up a coalition with local stakeholders including public health facilities (hospital-based and primary care), social care (both public and private), local authorities and representatives of older people. Moreover, in order to implement remote monitoring of patients at home cooperation has been established with different public and private stakeholders.

In **initiatives at the Innovation unit** in Barbastro, no specific governance structure is established but strategic partnerships and collaborations have been developed with relevant actors in the health and social care sectors. Close collaboration with GPs and other healthcare staff is achieved by involving different professionals in each of the projects. An agreement was also concluded with specialised care through which nurses are assigned to work in the projects (e.g. in the call centre). A collaborative environment was built with organisations such as the Red Cross fostering their involvement in the projects. An important factor in setting up such collaboration mechanisms, especially those within the healthcare system, has been the strong support of the management of the healthcare area.

In **ARIA**, in contrast, despite the strong operational coordination between different actors, the key actors governing the ARIA service are quite independent from each other. GPs and Telecare operators do not depend on the local hospital that is responsible for the whole service delivery. This reflects the clear separation of the organisational responsibility of the services in the two hospitals involved, and the administrative and contractual responsibility that rests with the local health trust as part of the regional health care authority.

In the case of Etxean Ondo and Getafe, it seems that a specific governance model may not have been required because of the already strong collaboration or agreements between involved stakeholders. In the case of Aria, it seems that the lack of governance could be one of the reasons why the initiative has not expanded beyond the local settings.
while the ARIA initiative is working well at local level and there has been strong commitment of the local hospitals and the local health unit since the inception of the initiative in early 2008, lack of engagement of stakeholders in the implementation process, in terms of a shared vision and ownership of the service delivery process has been identified as one of the barriers that have hindered its wider deployment.

In Gesundes Kingzigtal the governance structure consists of a combination of two advisory councils to the director, a patient board and a physician board as well as a provider board elected by the different professions partnering in the initiative (hospital representative, a nurse, a physiotherapist and two physicians). Gesundes Kinzigtal draws up providers contracts with physicians’ practices, hospitals, nursing homes etc. Beyond its governance model, it seems that the establishment of a specific organisation (Gesundes Kinzigtal GmbH) has been a key driver of success. This organisation focusses on the redesign of primary care, on population health management and on financial management, which facilitates system integration.

The MOMA initiative is the result of a close cooperation between two organisations, the Gertner Institute as the primary driver and the Maccabi healthcare services. One of the key factors for the success of the implementation of MOMA has been the relative autonomy of health funds in Israel as a result of a health care reform in 1995. These funds have the freedom to administer their operations themselves, and hence innovate and develop their own strategies without the intervention of any external policy makers. Nevertheless the implementation of MOMA has faced some challenges, as the legal framework did not consider remote consultation for instance.

In CARTS a governance structure is not yet established but is perceived as a must for full deployment by those involved in its development. The CARTS programme was developed through extensive consultation in focus groups involving public health nurses (PHNs), geriatricians, physiotherapists, occupational therapists, social workers and discharge planners.

As to INAA, an ecosystem of R&D institutes, healthcare institutions, insurance providers, government bodies and businesses have been working together to re-organise service provision and ensure cooperation between health and social care. The region after a long history of healthcare innovation and technology development has become a kind of knowledge hub which attracts small and medium enterprises (SMEs). In addition, a foundation has been established with the purpose of delivering integrated care services. The municipality is in charge of controlling the quality of the intervention and the foundation actively collaborates with the GPs who are the key coordinators to integrated care service delivery. This shows a very close collaboration between all stakeholders involved, including R&D and business actors.

Changes to the legal framework in the region facilitated the PDTA initiative after Local Health Units were granted more autonomy. Indeed the Local Health Unit plays a key role as promoter, catalyst and current steering organisation of the initiative. The governance model in this case is ruled by the Assisted Care Process (ACP) which has been defined with the contribution of the local GPs unions and the health care specialist representatives.

Last but not least the case of BSA is about an Integrated Care Organisation which comprises primary care, specialised care and social care operating under the same governance structure led by a Board and a General Manager supported by a Quality and IT department, and a Research and Innovation Department. There is no division by type of
centre (Hospital, Primary Care or Social Care) but by clinical, social and nursing areas. Furthermore, the president of the BSA Board is the mayor of the city, which fosters an alignment between local health and social policy on the one hand, and health and social care services provision on the other. This governance setting enables collaboration among the different providers and professionals to ensure the continuum of care.

4.4.2 Care organisation and integration through ICT

Nearly all the cases in this quadrant have implemented some care reorganisation and achieved a certain degree of care integration, especially services/clinical integration. A number of elements emerge as common to most if not all cases, from the role of a key coordinator in the care process, to the use of screening tools, the definition of personalised care pathways, care reorganisation and the creation of multi-disciplinary teams. Last but not least various degrees of integration have been achieved in each initiative.

In terms of care organisation, in most cases, a specific care actor acts as the key coordinator for integrated care service delivery. In four cases – MOMA, INAA, PDTA, CARTS - it is the GP, although in INAA district nurses and social care workers also play an important role as they identify and monitor patients’ needs, and reinforce the social network of the elderly and the caregivers within the neighbourhood. This reflects the social care focus of this particular initiative.

In ETXEAN ONDO, it is the nurse and social care workers who act as key coordinators respectively for primary care and social care. In ARIA, the specialist (pulmonologist) decides on the care protocol to be followed and revises the risk profile of the patients which is then used by the telecare organisation to monitor the patient. Finally, in BSA, a Case Management Nurse from primary care coordinates the care model for patients with complex chronic conditions, supports patients, family and carers during the continuum of care, coordinating the other health professionals as well as services provision and resources; this nurse has the capacity to move across the different tiers of care, including the patient’s home. In a number of cases, the creation of multidisciplinary teams has accompanied the introduction of the integrated care intervention.

In the BSA case, a chronicity team formed by a multidisciplinary group of experts (physicians, nurses, social workers, family workers, maintenance professionals, IT staff and administrative body from primary care, hospital and intermediate care) has been established. The organisational process is supported in most cases by care pathways developed by these inter-professional teams and has ensured the cooperation between levels of care and between health and social care enabling real access to a care continuum.

In the INAA intervention, GPs and nurses work in close collaboration with the social workers and also with the specialists, in cases where secondary care is needed. Integrated care is implemented through protocols and care pathways designed by inter-disciplinary teams of health professionals. Similarly, in PDTA, a fixed team of professionals including a GP, a specialist, a nurse and a social care worker (assisted on demand by other care professionals) has been set up. Through a diagnostic pathway all the dementia care actors are periodically involved in a revision of the patient’s care plan, in accordance with the information collected by the GPs and the different providers of the network of services.

In Getafe, the new comprehensive and extended care model has implied the direct creation of new jobs (geriatricians, nurse, clinical pharmacologist and occupational therapist). The specialised physicians are organised into four areas of care: acute care,
The latter acts as a hub for coordinating the communication between all healthcare and social services that participate in the healthcare of older, frail in- and out-patients. They focus on functionality rather than on the traditional comorbidity-based approach and deliver services in a coordinated manner.

In MOMA, the General Practitioner acts as a gatekeeper and as case manager. GPs decide which patients qualify to join the programme and invite them to join the initiative. However, as GPs could not be available to attend patients 24/7, a new role (Call Centre Nurse) was required to ensure the smooth flow of information among all the professionals involved in the care of the patient. The multidisciplinary call centre is the direct link between the patients and the rest of the stakeholders involved in their healthcare. They are responsible for the periodic remote visits (either via telephone call or teleconferencing system), and for attending all the calls that support patients in their self-care activity. Moreover, they update the EMR and get feedback from the primary care physicians and the multidisciplinary team (composed of nurses, doctors, dieticians etc.) which supports primary care physicians in their decision making and care plan development.

In addition to the above elements, screening also emerges as an important tool to implement the integrated care process, in several of the cases reviewed here.

Both INAA and CARTS aim to implementing effective screening services. For INAA, screening takes place through a web-based self-assessment tool that helps GPs, nurses and social care workers assess the pre-frail elderly population needs. In CARTS, the screening tool is the core element of this risk intervention strategy that aims to screen, triage, assess and treat older adults. In ARIA, the specialists revise the risk profiles of the patients, the aim of the ARIA intervention being to avoid hospitalisation and enable the patients to stay at home and maintain a higher level of social and work interaction. For ETXEAN ONDO the process starts by profiling patients according to their risk factors so as to identify the preventive measures adapted to their case. In the PDTA dementia care management all participating GPs follow a standardised procedure to pre-screen the patients which is the basis for defining the appropriate care plan and the most suitable combination of home care and support services for each patient. Last but not least BSA designed a predictive model tool that allows the risk stratification of the population depending on the care needs that would arise during the next year in order to identify those patients early rather than wait for their institutionalisation.

In all the cases in this quadrant, care re-organisation has happened through the closer coordination of different levels of care, and through collaboration between the care actors, effectively contributing to more efficient care delivery. As part of the care organisation process, we find the definition of personalised care pathways as one of the core elements in the organisation of care. This further contributes to better targeted care, facilitating prevention and patient empowerment.

In Gesundes Kinzigtal, the care approach builds on the definition of individual treatment plans and goal-setting agreements between doctors and patients, patient education and the empowerment of the enrolled patients. The traditional split between inpatient and outpatient care could be overcome by setting up a healthcare network that leverages the combined strength of all involved care professionals (e.g. GPs, therapist, hospital, pharmacies etc. and other organisations (e.g. gyms).
In ETXEAN ONDO, the professionals develop a personalised care pathway together which goes beyond the clinical care (primary and specialists) and includes home care services, tele-care devices, local services (such as laundry, hairdressing, personal support; transport, etc.) in order to ensure an accessible home care, as well as programmes to support formal and informal carers and patients’ families. The same type of organisational process has been developed in the context of nursing homes.

MOMA has improved coordination between professionals from different service levels and integration between primary care, secondary care, hospital care, social care and home care. Some social workers from outside of Maccabi participate in the multidisciplinary advisory group, providing social care support in addition to the social workers that are employed by Maccabi and are members of the MOMA multidisciplinary staff. The external social workers work collaboratively with MOMA staff but as they do not work for Maccabi, they have no access to patients’ health records. Call centre nurses and doctors collaborate closely, and communicate smoothly through the system, accessing all the relevant information about patients. Moreover, patients and their relatives are engaged and involved in the set-up, playing an active role in the communication process, through the nurse at the call centre.

The CARTS intervention pushes service re-organisation to ensure cooperation between tiers of care and between health and social care. The use of the CARTS tools is expected to change the way general practitioners, nurses and social care personnel organise their practice.

The Advanced Care Pathways is the core organisational innovation in PDTA, which moves away from the simple provisioning of home care service to patients with dementia, to a more personalised and integrated service not just for patients but also for their families and caregivers. The implementation of this new vision of the dementia care management required two main re-organisation efforts, the establishment of a “network of services” specialised in dementia care management and of an organisation in charge of dementia care.

In the ARIA service, the pulmonologists are responsible for the care protocol of patients, which is personalised for each patient and followed by all actors providing any service within the care process.

In BSA, once patients are included in the programme, an integral geriatric evaluation is carried out to develop an individual plan covering health education, self-care, clinical control of the chronic health problems, medication review and adherence.

INAA aims to implement effective support and treatments services for older people in their own daily environment. All care actors are involved in the process, including GPs, specialists, hospitals, home care institutions, insurance companies, a foundation which is responsible for the delivery of the integrated care services as well as the municipality and the insurance company which are in charge of controlling the service delivery. Through INAA the social network within the neighbourhood becomes a “new” health and social asset in the value chain, leading to the integration of both formal and informal caregivers, reinforcing self-care and improving the quality of life of the elderly.

In DREAMING patients took a more active role in their health care by measuring their vital signs themselves which in turn led to changes in the roles of nurses and doctors who spent less time on physiological parameters and could carry out other tasks. All the care decisions taken were better informed as they were based on more relevant data points, both from a
clinical and social care perspective. For instance, a hospital admission could be avoided for a given patient because his or her diseases was better monitored as a consequence of better handling by himself/herself or by the healthcare services. Another example is the quicker response from the contact centre to a patient with high blood pressure because this information was automatically sent to the Salud Information Systems, handled by the DREAMING Help Decision Support Systems and received and validated by a Healthcare Professional at the Contact Centre who made the decision about what actions to take.

As could be expected in initiatives that have been triggered by bottom-up decisions and organisational innovation, the patient focus is a key element in the care process and its organisation. This applies to all cases in this quadrant. Besides, when integration targets both health and social care services delivery, carers and patients’ relatives are also considered in the care process. The added-value of adopting a strong patient/relatives/carer focus is the ability to intervene as early as possible e.g. to avoid hospitalisation, or ensure the most appropriate treatment is applied thus ensuring more effective care delivery. A strong patient focus also helps making the patient feel part of the care process, thus enhancing patient empowerment. Ultimately a patient focus helps keep patients in their own environment with an impact on health care resources and on quality of life for the patient. The examples below illustrate how the patient focus has influenced the various initiatives in this quadrant:

**INAA** allows the close monitoring of patients’ needs, and reinforces the social network of the elderly and the caregivers within the neighbourhood. **Getafe's integrated care programme** focuses on the patient rather than morbidity. **ETXLEAN ONDO** respects patients’ dignity, rights, interests and preferences, while involving patients in the entire process. **CARTS** also fosters a patient-centred philosophy, focusing on patients’ needs, providing them with self-management support methods and allowing them to benefit from integrated care. In **BSA**, both patients and their relatives/caregivers are taken into consideration in the care organisation process. Similarly in **PDTA**, more personalised and integrated services are targeted not only at the patients but also at their families and caregivers. In **ARIA**, the patient is also at the centre of the system as the focus is on enabling the patient to stay at home and maintain a higher level of social and work interaction. Last but not least the **Gesundes Kinzigtal** integrated care initiative is also characterised by a strong patient focus driven by preventive care services delivered to the enrolled members.

Among all cases triggered by bottom-up organisational innovation, nearly all have achieved clinical/services integration. In one case (**CARTS**) full implementation is still pending. In **DREAMING**, the project has not continued although the successful elements have been taken up through other initiatives in the region. In **ARIA** implementation and hence service integration has happened only in a very limited local context, for a limited number of patients, and only between primary and secondary care. This shows that more fundamental changes to the health and social care systems would be required to scale up deployment in this particular case, and that the current separation of political and economic responsibilities are a strong barrier to deployment. Vertical integration, i.e. integration between for instance primary care and specialist care, has happened in all cases but CARTS and DREAMING. Functional integration is also a common feature in this quadrant, as five out of the ten cases have achieved this. Professional integration has also been achieved in seven of the ten cases. Horizontal integration e.g. between several primary care centres has only been achieved in three cases. One of them is **BSA**, which is perhaps the most
complete case of care integration. BSA indeed provides full integrated services: back-office and support functions are coordinated across all units involved with relations among and within different organisations. Furthermore, the services are coordinated in a single/seamless process thus achieving service/clinical integration. There is a shared mission, shared work values and a common organisational/professional culture. Policy and incentives are aligned at organisational level and funding and administrative integration has also been achieved. As a result both horizontal and vertical integration have been achieved. This level of integration is possible thanks to the structure of BSA, covering the continuum of care working across tiers of care with a multidisciplinary team of specialists, general practitioners, nurses and social workers.

The paragraphs below provide some illustration of the type of integration achieved in the various cases.

In Gesundes Kinzigtal GmbH information integration between primary care and specialist care has been achieved through a strong functional integration of all the back-office services and support functions. All care actors involved have access to patient data, including a social care / nursing care agency. Further, partnership contacts established with all involved organisations (beyond health and social care) help promote professionals’ integration, and at the same time common objectives and working values. In INAA, communication, information-sharing and collaboration among the different actors of the social and health care systems is paramount. As a result, there is a strong organisational and professional collaboration among all care actors involved, who work together effectively delivering integrated services with, to some extent, clinical/service integration. On the other hand there is no funding, administrative or organisational integration. In ETXEAN ONDO which focuses on homecare and nursing home management, including health and social services integration, back-office and support function coordination across all units involved has led to functional integration. Relations among different organisations and professionals have been enhanced. Organisational and service delivery integration has been achieved by the intervention through the coordination among social care workers, primary care centres and hospitals.

The integration in CARTS occurs at organisational, service delivery and clinical level. Some back-office and support functions are coordinated across all units involved and there are strong relations among different organisations and professionals within and across all organisational levels to coordinate the services in a single/seamless process. The stakeholders involved in CARTS share mission, work values and organisational/professional culture, which are supported by aligned policies and incentives at organisational level.

The PDTA case has fostered organisational, service delivery and clinical integration mainly through vertical integration (e.g. General practice/Primary care – Specialists/Hospitals). However, integration among similar organisations or units is rare, which hinders the exchange of experiences in the execution of the Assisted Care Pathway process among similar actors (e.g. primary care), and in turn prevents achieving the same quality of care for every patient. Care services are integrated through back office and support functions coordinated across all units involved and there is strong coordination among professionals within and across the organisations. The type of integration achieved has pushed a shared vision, work values and culture among professionals and the organisations involved in the process.
The integrated care programme in Getafe is a clear case of vertical integration between different organisations/units at different levels (e.g. hospital, community health centre, home care agency and nursing home). However there is no organisational integration. Communication between the community care unit and the rest of services and stakeholders is informal and based on personal knowledge, and there is no integration of information systems. Nevertheless, the use of health information systems in routine practice has facilitated the work of the physicians who visit patients at their homes or in nursing homes.

The DREAMING project was not a clear case of integration of health or social services but there was some service and information coordination between healthcare levels and with social care through the management of monitoring data and alarms by a call centre. In addition, the application that allowed actors from different levels of healthcare to review the patients' monitoring data can be seen as a facilitator of integrated care.

In the cases considered in this quadrant, driven by organisational innovation, it is clear that ICT do not have a leading role in care integration. Nevertheless, looking at the ICT used in each case we can highlight the following developments. Three cases (INAA, CARTS, and Getafe’s integrated care programme) use ICT to a limited extent. For INAA, it is the nature of the intervention that does not require heavy use of ICT, while there is a well-developed care ICT infrastructure in the region including EHR, ePrescription, Intercompany document sharing etc. In four cases (Gesundes Kinzigtal, ARIA, PDTA, Getafe’s integrated care programme), there is no interoperability between the various systems used in the different care organisations although ICT do contribute to the communication between the involved care actors. The lack of interoperability causes duplication in some cases and may hinder reaping the full benefits of care integration. In two further cases (ETXEAN ONDO, BSA), no specific ICT was developed but a rather advanced ICT care infrastructure was already available. In the case of BSA, the deployment of EHR has allowed implementing an organisational and care model, which effectively turns BSA into an integrated care organisation, besides contributing to improvement in healthcare. Last but not least, Maccabi has focused on the inclusion of ICT in the routine practice since the 1980s which has facilitated the adoption of MOMA. All health providers (external GPs), nurses and other professionals were already used to dealing with ICT which created a remarkable readiness culture to embrace the system.

4.4.3 Business models, funding and incentives

Various funding mechanisms characterise the ten cases in the bottom-up organisational innovation quadrant.

The most innovative funding model implemented is the shared-revenue model set up in Gesundes Kinzigtal, which promotes additional incentives for health professionals who, as a result, seem to be willing to collaborate. At the same time the system has allowed Gesundes Kinzigtal to generate revenues, without compromising quality of care which is a positive outcome. In this model, the associated health care professionals receive their normal fee plus targeted additional fees for the Gesundes Kinzigtal services equivalent to 5-10% of the revenues generated normally in the physician’s office. Gesundes Kinzigtal itself generates its revenue through the share it gets from the relative cost-saving for the insurances. Nevertheless, health providers of Gesundes Kinzigtal seem to be only partly interested in economic gains or in maximizing their own profit only, they rather value other elements, such as good reputation and social approval. To provide its services, Gesundes Kinzigtal invests a significant amount of money to attract young doctors to the region by
means of training positions that are required as part of their medical qualifications, in order to sustain its services in the long term. Policy holders pay the normal premium for their health insurance which covers health services as in the rest of Germany, plus most extra services of Gesundes Kinzigtal. There are no direct financial incentives for policy holders to enrol in Gesundes but every new member is offered a €15 voucher to be used to pay the membership fees for a local sports or hiking club. Currently, providers receive specific payments for comprehensive check-ups of patients’ health (routinely performed after patients have enrolled), calculation of patients’ prognoses and development of individualised treatment plans, including goal-setting agreements with patients, participation in project group meetings, development and implementation of preventive programmes, and case management of patients with chronic diseases. Furthermore, Gesundes Kinzigtal Gmbh bears additional providers’ IT costs which result from fulfilling providers’ requirements and setting up equipment for data exchange and for providing access (to view and insert data) to patients’ electronic health records.

The economic model in MOMA is based on the benefits associated with the improved health condition of the patients that arise from a more proactive care management. Maccabi expects important outcomes in the area of patients’ adherence to treatment and their perception of the disease. The final goal is the reduction of hospitalisation and GP visits frequency and resource saving as a consequence of a better care approach. Maccabi also considers non-economic outcomes in the business model, such as those produced on patients and caregivers life. The aim of Maccabi is to establish MOMA as a self-supported initiative. All the benefits are reinvested in the implementation of the strategy, and they expect the Call Centre to produce enough benefits to self-finance, although this has not been achieved yet. The MOMA project is funded mainly from the Maccabi budget for ongoing medical services (50% of the total budget) and support from the Gartner Institute (remaining 50%). More generally, Maccabi has been using incentives for the last 20 years in order to engage professionals in the use of the EHR. Incentives for the use of the EHR at its inception in 1990 included a 2% increase in quarterly capitation fees, negotiating significant group discounts on the purchase of devices and hardware, interest-free loans for purchasing hardware with convenient repayment conditions and free software provision to the physician.

In four more cases, INAA, ETXEAN ONDO, CARTS and DREAMING, the activities have been funded as a project or pilot, through national or EU budgets which have allowed implementation but do not guarantee sustainability. In the case of INAA, parts of the programme are funded by the insurance company and the municipality and others are co-funded by the European Commission (FP7 project) and the insurance company. Furthermore, the insurance company is currently reimbursing the screening element of the initiative with its own funds, paying the GPs (or the practice nurses) compensation for the time spent on screening the frailty group. The current reimbursement is provided as part of a national stimulus package due to expire. A new legislation, the Social Support Act (WMO), may become the main instrument to regulate long-term care which INAA may benefit from. ETXEAN ONDO has been funded by the Department for Employment and Social Policies as a pilot project, so no specific reimbursement model has been introduced. The budget included the funding of a part time social care worker in each area as case manager. The CARTS programme has a multi-source funding, directly from the Irish Health Department and indirectly through a private Foundation. Because the programme was still a research initiative at the time of writing, the services were not reimbursed but national research funding bodies and EU funding may cover the intervention in the future. In Barbastro,
**DREAMING** was funded by the Spanish and European institutions which covered the additional costs (e.g. for technology) related to the new services while the costs of care provision (GP visits) were funded by the health and social care public budgets. Professionals involved in the projects did not receive any monetary incentive for their participation.

The four remaining cases are all funded by existing reimbursement schemes. In **PDTA**, GPs and the other health care providers receive the standard reimbursement from the local health unit, while the organisations accredited for providing home care services sign a contract with the local health units based on a predefined budget. Although the GPs play a pivotal role in the development of the PDTA case, their involvement takes place on a voluntary basis and no specific incentives are foreseen for them. In contrast, the health care specialists operating in the Dedicated Specialised Territorial Surgery units receive a (small) fee for each visit that they have to perform following an intervention from the local health unit. There is no common outcome-oriented incentive schemes for the care professionals involved, neither has a reimbursement model been developed for the PDTA approach. The different costs of care and drugs applied in the territories of each local unit are a further complication. In the case of **ARIA**, reimbursement is based on a capitation model, where health care professionals receive a fixed amount of money based on standard performance parameters agreed upon at national level, and which is partially adjusted by the Local Health Unit. GPs further receive a small sum as a sort of coordination fee for their participation in the ARIA initiative which is a fixed component of their income. There is no common outcome-oriented incentive schemes for the care managers and health care professionals involved. The economic flow of the ARIA initiative is based upon the usual practice applicable to all the actors of the process, with the exception of the telecare provider, which is reimbursed by the Regional Authority on the basis of a service level agreement (SLA). The GPs are reimbursed by the Local Health Care Unit through a standard contract based on the number of patients assisted, whereas the hospital in charge of the services is reimbursed by the Regional Health Care Authority and the Local Health Unit on the basis of the bed-days used and the type of treatments performed. This scheme does not provide incentives for hospitals to apply the service on a wider scale. None of the patients currently participating in the initiative has to pay out of pocket money for the services, as their precarious health conditions entitles them to full exemption for all the care services received. The fact that **BSA** works as an integrated care organisation means that there are funding mechanism available to ensure equitable funding distribution for different services or levels of services. However, the lack of national investment and funding programmes limited the full potential of the initiatives, as there is no sufficient innovation in reimbursement models. In **Getafe**, the integrated care programme does not receive any dedicated funds from the hospital and is running on the normal budget of the geriatric service. All physicians involved are hospital staff who do not receive any incentives for participating. Most of the equipment needed to implement the home visits has been paid with funds from regional, national and European projects. The geriatrics service is aware of the need to produce economic benefits. The new model aims not only to provide better care and improve patients’ clinical conditions and disease management, but also to reduce costs and become self-supporting.

The above shows that most of the initiatives in this quadrant have been implemented without an innovative reimbursement model. In cases where EU or national funding has been used to set up the initiative, future deployment is uncertain. In cases where traditional funding schemes have been used, the lack of innovation may act as a barrier to further deployment. The fee that may be granted for being involved in these initiatives is often not
significant to act as a real incentive. The only case where an incentive system is in place is Gesundes Kinzigtal which has achieved a win-win situation and set up a specific shared-revenue model whereby GPs and other health professionals receive compensation for specific activities, going beyond a simple coordination fee and allowing them to earn 5-10% of their yearly income through these incentives.

There is still a long way to go for integrated care to be reimbursed in an adequate manner and more work is required on the definition of incentive schemes to foster further deployment. Clearly defined incentive schemes seems to be the way forward, although the lack of examples may call for more research in that area, especially to identify how such schemes could be developed depending on the regional or national context.

4.4.4 Deployment level and Impact

The level of deployment of the cases in this quadrant ranges from a few patients like in ARIA (which has 20 patients, although the service has been operational since 2006) to local coverage (e.g. BSA which covers the whole district of Barcelona for which it is responsible) and to regional coverage (e.g. the case of Gesundes Kinzigtal where in principle 33,000 policy holders are entitled to benefit from the programme though to date around only a third are enrolled, for an initiative that also started in 2006). The latter is also the only initiative for which rigorous counterfactual evaluation has been applied. The MOMA services offered by Maccabi are another example of deployed services. They have been offered to more than 10,000 patients since their start in 2012. MOMA is available to patients on a voluntary basis and does not replace traditional services.

If one considers the duration of these initiatives, one could conclude that even ARIA complies with the criterion of deployment defined for the case selection. Indeed the fact that it has been running for 8 years, shows that continuity of funding is provided, patients are entitled to the service as to any other care service. Nevertheless, the scale of the ARIA initiative remains at a local level with only few patients concerned, which reflects a lack of scalability of the initiative and the need to address barriers such as framework conditions.

For other cases, full implementation is still pending (INAA, CARTS, ETXEAN ONDO) and therefore impact evaluation is not yet available. Nevertheless in these cases, positive outcomes are expected. For INAA, a reduction in hospitalisations and emergency visits as well as in number of falls is anticipated which in turn implies a cost reduction for the healthcare insurer. A positive impact is also expected on health outcomes, functional status and patients’ quality of life, which will be measured through standard instruments. The impact of the screening element will be assessed through an EU-funded project and it was planned to gather evidence on the cost-effectiveness of the programme from September 2014. As to the CARTS programme socio-economic benefits are expected with impact on sustainability of primary healthcare and quality of life. A tailored intervention strategy is planned with a control group and an intervention group. The intervention will be evaluated and all elements of the programme will be priced to determine if the interventions are cost-effective. Reduction of average length of stay, planned and unplanned admissions, emergency visits and bed-days reduction are expected in the intervention group. The impacts of the ETXEAN ONDO intervention are still subject to evaluation but early indications point to an improvement in the nursing home residents’ quality of life and satisfaction. Qualitative data show similar trends about participants who live in their homes. Health and social care professionals involved in the intervention were also satisfied
with the initiative, especially the social workers who were given the opportunity to perform their tasks as case managers.

The only initiative which has carried out detailed, qualitative and quantitative evaluations published in the scientific literature is Gesundes Kinzigtal. Quasi-experimental, population-based controlled cohort trials have also been carried out. The impacts measured show that Kinzigtal has led to savings compared with normal care in terms of pharmaceutical costs, hospital costs and rehab/home care costs and no reduction of quality of care. After 8 years of activity, the evidence based on 2006-2014 data shows that the integrated care management process introduced in the region by the Gesundes Kinzigtal initiative has led to a net annual saving for the health insurance companies of close to 3% considering all policy holders in Kinzigtal, whether enrolled or not. The GK initiative has led to a significant reduction of the mortality rate of the enrolled policy holders in comparison with the rest of the citizens living in the region (Baden Württemberg). Further, there was a significant reduction of people leaving the insurance company for those enrolled in the GK initiative compared to people not participating, indicating increased member loyalty. A qualitative analysis further showed that more patients enrolled in GK and who had agreed on objectives with their GP felt that they live healthier than before compared to those not enrolled.

Maccabi has performed some internal studies to validate the feasibility of the integration of the new strategies into routine practice. These studies comprise patient surveys on different cohorts of patients (i.e. CHF, COPD, Type II Diabetes and Frail Patients), doctor surveys, and economic impact analyses. These showed good acceptance by patients, and the perception of a strong coordination of care through MOMA. There was some impact on Quality of Life indicators and depression rates decreased. Further, results showed an increase in the maintenance of a healthy diet, physical activity and the compliance with medication. Cost impacts were also assessed. Overall, according to Maccabi, MOMA accounts for an estimated cost savings of 4% compared to average Maccabi members, which covers approximately a third of the operating costs of MOMA – and this only after a year of full operation. It is expected that cost-effectiveness will continue to increase as MOMA gains in maturity.

Among the remaining cases, PDTA has carried out some impact assessment albeit not counterfactual. The impacts measured include a reduction of the caregivers’ burden, more satisfaction with care on the part of family members and caregivers, enhanced quality of work by health and social care professionals, improved quality of life of patients and their families, and sustainability of health care systems. In economic terms, the initiative has led to hospitalisation reductions and cost reduction, although no evidence proving a causal relationship between the approach implemented and the above mentioned impacts has been gathered. An experiment however indicated that the GPs of the Brescia Local Health Unit applying the PDTA approach to their patients perform better than colleagues of the other Italian territories (increased efficiency, more compliance to protocol and reduction in prescriptions). The ARIA services have also been evaluated after almost six years of experimentation and the benefits identified include patients’ and families’ relief/comfort; useful clinical decision-making support to the GPs, significant reduction in hospital admissions for acute respiratory diseases and reduction of the regional healthcare system’s costs. According to the data gathered in ARIA, the implementation of the initiative allows saving €12,000 per patient-year.
At the time of writing BSA was carrying out an evaluation process trying to link its integrated care model to health outcomes and impact. Preliminary results indicate a reduction of the average length of stay, average number of bed-days and emergency visits. Furthermore, the clinical pathways developed have facilitated an improvement in the process outcomes, including compliance and adherence to guidelines. All these impacts have improved the functional status and health outcomes of the patients, and led to a reduction of the operating cost of clinical services. The use of EHR has facilitated the coordination between the levels of care, improvement in the organisational processes, as well as of the decision-making process. All these measures have led to better quality of care with greater control and better results in the target population making BSA more efficient.

In Getafe, the integrated care programme is available as part of the services offered by the public health system in the Region of Madrid. The University Hospital of Getafe is the reference public hospital for a zone of the region of Madrid with around 200,000 inhabitants. In terms of impact, the programme has led to reduced average length of stay in the acute care unit, improvement in functional status, improvements in the orthogeriatrics unit, and reduction of unnecessary hospitalisation. This in turn has led to significant overall cost savings.

Finally in DREAMING, the main outcome measured was health-related quality of life (HRQoL), mental health results improved though physical status did not, and incidence of falls was higher. Economic outcomes in terms of hospitalisations and length-of-stay as well as use of healthcare services (GPs, specialists, ER) were also measured, but the total cost per participant over the trial period was higher in the DREAMING group in the case of Barbastro than in the control group. Finally patients were satisfied with the equipment provided and felt an increased sense of security through the DREAMING services. Taking in to account the lessons learnt from DREAMING, the innovation Unit of the Barbastro Hospital has adapted its approach in subsequent projects searching for a sustainable solution. Some scenarios with costs savings have already been identified and they are working on the definition of a business model that will underpin large-scale deployment.

4.4.5 Conclusions

- The initiatives show a similar focus on many elements of re-organisation of care processes, indicating some common view on integrated care.

The cases triggered by bottom-up organisational innovation display some common features which relate mainly to the reorganisation of care processes. In most cases, a dedicated key coordinator for integrating services, multidisciplinary teams, a patient focus, the screening of patients through specific tools and the definition of individualised care pathways seem to be important elements of the care approach. From the initiatives considered, it seems that the role of one care actor (GP, nurse or specialist) is important for coordinating care pathways by acting as the interface between the patient and other care professionals.

- ICT solutions may not be used to their full potential, and deployment potentially depends on the existing infrastructure.

ICT do not play a prominent role in most cases, because the initiatives are much more focused on organisational and patient/health related issues or mostly because the infrastructure is already well-developed so that care integration is being facilitated by ICT in a kind of "natural" way. In a few cases though, interoperability between various
information systems (e.g. GPs and hospitals) seems to be a hindrance to full deployment or more efficient care management.

- Different models of governance are used, in which the presence of a leader for central coordination may be important for success.

In terms of governance, we see that many stakeholders are involved in the process through different models. There is no “winning” model, but where there is a clear leader and efforts to involve all stakeholders through more or less formal structures, this leads to positive outcomes. Where no governance is in place and no policy support is pushing for changes, we see more difficulties with deployment.

- Most cases lack a business model and schemes for financial incentives

Business models are not common in this quadrant and incentives schemes have been developed specifically and successfully only in one or two cases. This shows that there is still a long way to go for integrated care models to be complete, in the sense that the lack of outcome oriented incentives and compensation for being involved in integrated care implementation act as a barrier to further deployment. Relying on voluntary efforts from GPs or other care professionals cannot work alone, especially if scaling up is the target.

- More structured evaluation of impact and deployment could strengthen the initiatives.

Among the ten cases in this quadrant, we see very local initiatives with small numbers of patients and wider implemented initiatives covering a whole region. The impact of these initiatives has seldom been measured with counterfactual methods, although in most of the cases the expected positive outcomes or the outcomes measured with the data available give confidence in the positive impact of integrated care. This reflects the lack of evaluation culture in that field in certain regions or countries, and perhaps also the difficulties associated with measuring outcomes in that field. This calls for further research and knowledge exchange.
5 Discussion

The case studies analysed in this report are the result of a broad selection of promising or successful initiatives. In fact they represent the solutions that the organisers of these initiatives have chosen to optimise their results, given the specific objectives, the local situation, the available resources and a number of other factors. What we have presented here is a qualitative observational cross-analysis of cases, which vary in objectives and numerous other aspects.

Though this variety makes it difficult to draw out one or several typical models of organisation, it provides insights into the diversity of interventions, and the strategies chosen in the various initiatives to optimise activities in order to achieve the desired results.

Governance and policy

Integration of healthcare provision is a major challenge due to its complexity. All elements of healthcare are involved, from financing mechanisms to behavioural/cultural aspects at the workplace. This complexity is reflected at different levels of decision making: the primary process of patient care, the organisational context and the financing and policy context. Each level is characterised by specific goals, stakeholders and mechanisms. For successful integration of healthcare services, it is essential that strategies and instruments on these different levels are embedded in the healthcare system in a synergistic way (Plochg & Klazinga 2002).

The initiatives in this analysis all focused on specific parts of integrated care, and were categorised accordingly in the four ‘trigger’ quadrants. For each initiative to achieve a change in healthcare provision towards integrated care, all essential conditions had to be addressed to some extent: governance, financing, reorganisation of healthcare delivery and deployment. Also, at a more detailed level, various underlying conditions were found to contribute to creating a favourable environment for the take up of strategies: for example, changes in the education of healthcare professionals or interoperability of ICT systems in a region or country. Therefore, policies outside the scope of the initiatives could also play a role in the success of a project. For example, in Scotland new legislation coming into force in 2015 in which integration of health and social care is regulated, may enhance the impact of the two initiatives in Scotland (SPARRA/ACP and TDP). The same goes for Oulu Self-Care in Finland.

Governance seemed to be an important dimension for all cases. In cases where no specific governance structure existed, there may have been very strong collaboration ties or formal cooperation frameworks may have been agreed which, de facto, gave some form of governance to the initiative. Out of the seven cases with a technological innovation trigger, three had no specific governance structure: two of these were locally-driven and the third was a top-down initiative. For the organisational innovation trigger quadrants, a governance structure or strong collaboration between all stakeholders appeared to apply to all cases. Of all the initiatives, those with a top-down organisational focus had strong management structures in which the national or regional level was often connected with the local level in charge of implementing the actual solutions. In one initiative (TPD), which covered a variety of different projects, it was observed that the end results of those projects which lacked organised cooperation among stakeholders were not as good as the results of the projects which had explicit cooperation structures.
Re-organisation of services

The re-organisation of services may affect the actual structure of healthcare delivery or imply the optimisation of care delivery within the existing healthcare system. In general, the initiatives reviewed did not aim to make changes to the healthcare system, but they introduced or enhanced coordination of care and cooperation among those who interact to deliver care. Indeed, integration was not always a primary objective of the initiatives but the result of a process. In several initiatives, it was stressed that the existing structures with regard to funding and responsibilities at institutional level blocked the full potential of integrated care. Alleviating this, however, would require re-structuring healthcare systems, which is probably a gradual process that may take many years.

Furthermore, it emerged from the cross-case analysis that initiatives driven by technological innovation did not have the same impact on care organisation as initiatives driven by organisational innovation. Though this may sound tautological, it shows that care integration is much more about rethinking care processes, redesigning care pathways, and giving some care professionals a key coordinating role which helps coordinate care processes amongst others, than about introducing new technologies. The latter may facilitate interoperability and information exchange but without accompanying changes to care processes, the initiatives may simply fail to scale up. While this does not mean that technologically-driven initiatives are bound to fail, it does mean that the focus of these initiatives should also be on care organisation if the full benefits that technologies bring are to be reaped.

In fact, the analysis shows that while ICT solutions should be strongly embedded in the overall approach taken to integrate care, they should never be the only starting point. In terms of models of organisation, it seems that the definition of care pathways, a patient focus, screening, the function of a key coordinator with overall responsibility and the creation of multidisciplinary teams or at least the close collaboration between all involved professionals, are all ingredients that contribute to the successful implementation of integrated care. These elements should therefore be borne in mind in any new initiative, driven by both technology and organisational innovation.

Patient focus

Integrated care means person-centred coordinated care. Patients' needs are the core and the starting point for integrated care. A patient focus was also more obvious in cases driven by organisational innovation. In these cases, not only were patients' needs considered, but also those of their carers or relatives involved in the care process. A main concern was providing access to a continuum of care, ensuring access to patient information so as to take the right decisions in the best time frame and help the patient navigate through the system. In one of the cases, great attention was paid to the use of ‘Living Labs’, which constitute a tool that should contribute to better identifying and therefore answering patient needs.

In the initiatives with a bottom-up approach to organisational innovation, the starting point was the needs of patients and healthcare professionals working with patients. In the initiatives with a top-down organisational focus, the needs of patients may not always be a strong element in the development and implementation of innovative strategies. This may also be the result of limited availability of structured input from patients' organisations. In many EU Member States, patient organisations are not well developed, and therefore it
may sometimes be impossible to have strong representation by patients in the process of organising integrated care that takes account of patients’ needs.

Funding and incentive schemes

Among the seven cases that were driven by technology innovation, both top-down and bottom up, there was specific public funding for the technology development, either from EU, national/regional or municipal budgets. Only in one case, did we see a mix of public and private funding by means of public-private partnerships. In two of the cases (both top-down initiatives), funding was secured for the development and maintenance of the infrastructure and the sustainability of the initiative does not seem to be in danger. For the other cases, however, where no long-term funding strategy was foreseen upfront, we see difficulties in maintaining the services or converting projects into sustained services.

None of the cases in these two quadrants had a specific, new funding scheme or incentive system to compensate the professionals for implementing the initiative. When some kind of compensation was provided, it was a very small component of the remuneration and could hardly be considered an incentive.

In all cases, a lack of innovation and outcome-oriented reimbursement schemes has hindered reaping the full benefits of each of the interventions. In addition, the lack of alignment in incentives meant that, depending on the organisation the care professionals belonged to, there may or may not have been compensation (e.g. through coordination fees) for the additional work involved in the new integrated care service delivery. This misalignment again hindered the realisation of the full potential of integrated care services.

Turning to the cases driven by organisational innovation, only a few cases in the organisational/bottom-up quadrant developed incentive schemes and succeeded in contributing to the commitment of healthcare professionals. In most of the cases, incentives were a minor component of the payment system, if they existed at all, which meant that the personal motivation of individuals was relied upon. When this is taken to the extreme, an initiative which has been very successful in its local context may fail to scale up anywhere beyond.

From an organisational point of view, in several initiatives the coordination and cooperation for integrated care took place within the existing financing structure of healthcare. This may lead to a sustainable situation in which the financial structure is not changed. It was also apparent from some initiatives that the existing financing system was a barrier for full implementation of integrated care. Structural changes in the financing of healthcare delivery may greatly enhance the implementation of integrated care when cooperation and coordination is rewarded.

Role of ICT

It is obvious that ICT play a role in the technological trigger quadrants. In these cases, we can conclude that considerable efforts were invested in not only developing the technology but also ensuring its interoperability and flexibility, thus allowing the addition of further services over time. While this sounds like a very good premise for integrated care services deployment, the cases studied revealed that it takes a long time before further services are included on the created platform. In some cases, lack of funding made it difficult to pursue integration, and some services may be dropped over time. In other cases, it is the organisational framework that needs adapting. In yet other cases, it is the lack of use by patients or professionals, who fail to see the added-value of the new services, that slows
down deployment. As a result, a stronger push, e.g. from policy makers, may be required to make things happen.

Focusing on the organisational innovation trigger, we find that ICT have enabled integration, hence their role is important. Nevertheless it seems that initiatives driven by organisational innovation have a better chance of deploying successfully and perhaps faster than those pushed by technology-driven innovation. This is not to say that technology innovation should become secondary, but rather that technology-driven interventions should not underestimate the importance of organisational issues. In other words, it is the combination of an adequate ICT infrastructure and re-organised care that leads to the best results.

In the top-down initiatives with an organisation focus, ICT solutions were mainly used to communicate with patients and among care providers. In this sense, ICT were an essential element in the initiatives; however, further use of ICT solutions, including for example remote monitoring could contribute even more to integrated care. An organisational innovation driven initiative may constitute a better approach to sustainable implementation, but may not fully explore or make use of the ICT solutions available.

**Engaged professionals**

The essence of integrated care is the engagement of all relevant stakeholders. In all the cases analysed, the cooperation between care professionals emerged as one of the key elements in integrated care services delivery.

Despite coordination activities and reorganisation of healthcare structures, the success of the initiatives depends largely on the actual motivation and participation of individuals. Indeed in some of the cases, the personal motivation and engagement of e.g. specialists without any compensation for the extra burden incurred through care integration was a key factor of success.

In top-down initiatives, where the participation of the professionals and patients may not be obvious in the initiation phase as the activities are triggered by political decisions, their involvement early on in the process is also essential.
6 Conclusions

Some general conclusions can be drawn from the analysis, based on the specific conclusions in the sections in each ‘trigger’ quadrant. The findings are not surprising in view of the review of the literature summarised in Section 1.3 which shows the myriad of perspectives that could be applied to the analysis of integrated care. With this study we advanced our understanding of integrated care services implementation by confirming that the facilitators identified in SIMPHS2 are also relevant in our 23 cases but we can state that they must be read through more nuanced lenses. The context and dynamic dependent nature of successful integrated care deployment suggests the following main policy implications.

- Many framework conditions and activities may have to be aligned to achieve integrated healthcare provision.

Integrated care is a broad concept that is defined by its outcome, i.e. the integration of care provision to patients leading to patient-centred care, in which coordination and cooperation among healthcare providers avoids fragmentation of care delivery and enhances quality and efficiency. This is increasingly important in the light of the current demographic trends and the increase in the number of patients with chronic conditions.

While this goal is common to all the initiatives included in the analysis, none of them includes all possible elements of care integration in their strategy and related activities. Each initiative covers part of the possible elements for achieving the integration of healthcare provision. Some initiatives focus on providing guidelines and regulatory conditions for health care providers to pursue integration of care, while others are involved in the actual process around the delivery of care to the patient.

- The trigger for the initiative determines its specific strengths and weaknesses.

The analysis suggests that ‘triggers’ matter, which implies that different support policies and different transferability pathways could be envisaged depending on where a potential new initiative might originate from and on the basis of which main drivers. Our case research provides important insights into the relative importance of different factors depending on whether the innovation starts at local or at national/regional level and on whether the main drive is technological or organisational. Moreover, success factors in the different trigger types could be cross-fertilised. For instance, lessons learned from cases triggered at a local level could be adapted to regional or country level following a top-down approach but considering the complexity associated with the size of the initiatives in terms of number of stakeholders involved. Conversely, some better governance mechanisms could be transferred from the national/regional to the local level. In any event, one should be aware of the weak and strong points in each of the quadrants when implementing an initiative.

- ICT solutions to support integrated care may not have been used to their full potential and in order to achieve successful deployment of ICT solutions, there should be a good fit within the organisational changes.

The use of ICT solutions to achieve integrated care has not been a major driver in the majority of cases. This raises the question whether the full potential of ICT solutions for integration of care delivery is used adequately. It also suggests that technical solutions and care reorganisation are not strongly aligned and may be insufficiently connected. For effective use of technical solutions, both technology-driven initiatives and organisational
innovation driven initiatives could find more effective ways to align innovative changes in healthcare.

- The impact of initiatives may be bigger among those triggered by organisational innovation.

The particular configuration of evidence emerging from the cases analysed seems to suggest that top-down initiatives mostly driven by organisational innovation are those that achieve most impacts or at least are more systematically evaluated. Obviously, given the limited external validity and capacity to generalise typical of case study research, this finding must be taken with caution and will have to be further corroborated by future research.

- Policies and practices outside the initiatives can be of crucial importance for the success of an initiative.

Given the complexity of changing to more integrated care, an important condition for success is that relevant policies are aligned and enable initiatives to be implemented in actual practice. It may be useful to assess this environment carefully in the planning of initiatives. The integration aimed at in each initiative may require a specific set of conditions in order to make a real difference for patient care. These conditions are often not within the scope of the initiative itself. Consequently, those launching integrated care projects need to be very conscious about barriers and enablers in order to ensure their initiative has an impact for patients. This may be possible only to some extent, but it is still very important. Good examples of enablers are the existence of electronic patient files or reorganisation activities in which budgets and organisations are re-structured to reduce fragmentation of care.

- International transferability is not easy to establish due to the variation and specific nature of the studied cases.

The analysis of the cases documentation and the reconstruction of their development suggest that the transferability of successful cases is far from straightforward. The innovation process faced, in most cases, very specific and diverse legal, institutional, technological, organisational and cultural challenges that can hardly be standardised in a kind of cookbook that 'would-be innovators' in integrated care should follow. On the other hand, transferability is perceived as less costly and more feasible within the same country/region due to the fact that there will be common legal, institutional and cultural aspects. Although not explicitly analysed in this report, the fieldwork upon which each case study is based showed a consensus among experts consulted about the difficulties for international transferability of their experience due to the highly context dependent nature of both technological and organisational innovation.
### Annex 1 - Case characteristics

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<th>Case</th>
<th>Region</th>
<th>Brief description</th>
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<td><strong>FIRST WAVE</strong></td>
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<tr>
<td>ARIA</td>
<td>Emilia-Romagna (Italy)</td>
<td>Implementation of integrated home care services for COPD patients.</td>
</tr>
<tr>
<td>BLMSE</td>
<td>Skåne Region (Sweden)</td>
<td>Improving cooperation between home care, elderly home care, primary care and hospital care to better coordinate care of the elderly</td>
</tr>
<tr>
<td>BSA</td>
<td>Badalona, Catalonia (Spain)</td>
<td>Integrated care organisation offering health and social care services.</td>
</tr>
<tr>
<td>CARTS</td>
<td>Cork and Kerry South-West Region (Ireland)</td>
<td>Screening, triage, assessment and treatment to reduce risk of frailty and adverse outcomes in community dwelling older adults</td>
</tr>
<tr>
<td>eTrikala</td>
<td>Trikala municipality, Thessaly Region (Greece)</td>
<td>Telehealth/telecare services for chronic patients and the elderly and social services to all citizens.</td>
</tr>
<tr>
<td>EtxeAN ONDO</td>
<td>Basque Country (Spain)</td>
<td>Integrated person-centred care model for the elderly.</td>
</tr>
<tr>
<td>Gesundes Kinzigtal</td>
<td>Kinzigtal region, Baden-Württemberg (Germany)</td>
<td>Integrated care and preventive services offered to the population covered by the health insurances AOK and LKK, based on a shared savings contract between Gesundes Kinzigtal and AOK/LKK.</td>
</tr>
<tr>
<td>INAA</td>
<td>Twente (Netherlands)</td>
<td>Helping the elderly to live independently for longer periods in their own environment.</td>
</tr>
<tr>
<td>MACVIA-LR</td>
<td>Languedoc-Roussillon (France)</td>
<td>Innovative solutions through living labs to improve care for chronic patients.</td>
</tr>
<tr>
<td>NEXES</td>
<td>Barcelona, Catalonia (Spain)</td>
<td>Integrated care services for chronic patients based on structured interventions addressing prevention, healthcare and social support.</td>
</tr>
<tr>
<td>Oulu SelfCare</td>
<td>Northern Ostrobothnia, Oulu (Finland)</td>
<td>Cloud services that can support integrated care services and allow the elderly to monitor their own well-being and manage their own health.</td>
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<td>PDTA</td>
<td>Brescia/Lombardy (Italy)</td>
<td>Anticipatory care planning to manage patients with chronic diseases (e.g. Dementia, Alzheimer)</td>
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<tr>
<td>SAM:BO</td>
<td>Region South Denmark (Denmark)</td>
<td>Encouraging local health and social care actors to launch integrated health care initiatives through shared agreement protocols of collaboration.</td>
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<tr>
<td>SOLE/FSE</td>
<td>Emilia-Romagna (Italy)</td>
<td>Interoperable infrastructure enabling the development of integrated care services for the whole population of the region.</td>
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<td>SPARRA</td>
<td>Scotland (United Kingdom)</td>
<td>Local integrated care initiative which uses a population pre-screening model to measure patients’ risk of emergency admission to hospital in order to deliver anticipatory care planning.</td>
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<td>TDP</td>
<td>Scotland (United Kingdom)</td>
<td>Funding and stimulating the implementation of telecare projects in the local community by health partnerships throughout Scotland.</td>
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<td>ACTION</td>
<td>Borås municipality, Western Sweden (Sweden)</td>
<td>Self-care and family care support service provided through ICT installed at patients’ homes</td>
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<td>DiabMemory</td>
<td>Breitenstein, Lower Austria (Austria)</td>
<td>Remote monitoring of diabetes patients using mHealth</td>
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<td>Barbastro, Aragon (Spain)</td>
<td>Remote monitoring services to help the elderly live independently</td>
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<td>Getafe's Integrated Care Programme</td>
<td>Madrid (Spain)</td>
<td>Integrated care programme for older in- and out-patients</td>
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<tr>
<td>MOMA/Maccabi</td>
<td>Israel</td>
<td>Care model based on a multi-disciplinary 24/7 advanced technology call centre for treatment of various chronic diseases (including remote monitoring)</td>
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<td>Healthcare PPI</td>
<td>Galicia (Spain)</td>
<td>Public Procurement of Innovation projects and experiences developed in the healthcare system of Galicia</td>
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<tr>
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<td>Carinthia (Austria)</td>
<td>Pilots to integrate telemonitoring solutions with existing systems for diabetes type 2 and COPD patients and assess impact of the system</td>
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<tr>
<td>VHA</td>
<td>USA</td>
<td>Integrated care model for elderly veterans and their caregivers</td>
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<td>Case</td>
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Source: Authors elaboration based on gathered data
### Table 4: Number and types of stakeholders interviewed

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Annex 2 - Relevant scientific sources on integrated care


Atun R. (2004). What are the advantages and disadvantages of restructuring a health care system to be more focused on primary care services? Geneva: WHO Regional Office for Europe’s Health Evidence Network (HEN).


Hebert, R., & Veil, A. (2004). Monitoring the degree of implementation of an integrated delivery system. *Int J Integr Care, 4*, e05.


References


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European Commission
EUR 27283 EN – Joint Research Centre – Institute for Prospective Technological Studies

Title: Strategic Intelligence Monitor on Personal Health Systems Phase 3 (SIMPHS3). Cross-case analysis: models of organisation

Authors: F. Abadie, W. Graafmans, F. Lupiañez Villanueva , C. Codagnone

Luxembourg: Publications Office of the European Union
2015 – 65 pp. – 21.0 x 29.7 cm

EUR – Scientific and Technical Research series – ISSN 1831-9424 (online)
ISBN 978-92-79-48533-6 (PDF)
doi:10.2791/15941
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