



Exploring improvement plans of fourteen European integrated care sites for older people with complex needs*

Annerieke Stoop^{a,b,c,*}, Simone R. de Bruin^a, Gerald Wistow^d, Jenny Billings^e, Georg Ruppe^f, Kai Leichsenring^{f,g}, Konrad Obermann^h, Caroline A. Baan^{a,c}, Giel Nijpels^b

^a Centre for Nutrition, Prevention and Health Services, National Institute for Public Health and the Environment, Bilthoven, the Netherlands

^b Department of General Practice and Elderly Care Medicine, Amsterdam Public Health Research Institute, Amsterdam UMC, Vrije Universiteit Amsterdam, Amsterdam, the Netherlands

^c Scientific Center for Transformation in Care and Welfare (Tranzo), University of Tilburg, Tilburg, the Netherlands

^d Personal Social Services Research Unit, Department of Social Policy, London School of Economics and Political Science, London, UK

^e Centre for Health Service Studies, University of Kent, Canterbury, UK

^f Austrian Interdisciplinary Platform on Ageing (ÖPIA), Vienna, Austria

^g European Centre for Social Welfare Policy and Research, Vienna, Austria

^h Mannheim Institute of Public Health (MIPH), Heidelberg University, Germany

ARTICLE INFO

Article history:

Received 8 February 2019

Received in revised form

16 September 2019

Accepted 17 September 2019

Keywords:

Older people

Integrated care

Expanded chronic care model

Broadly-based prevention

ABSTRACT

Integrated care programmes are increasingly being put in place to provide care to older people living at home. However, knowledge about further improving integrated care is limited. In fourteen integrated care sites in Europe, plans to improve existing ways of working were designed, implemented and evaluated to enlarge the understanding of what works and with what outcomes when improving integrated care. This paper provides insight into the existing ways that the sites were working with respect to integrated care, their perceived difficulties and their plans for working towards improvement. The seven components of the Expanded Chronic Care Model provided a conceptual framework for describing the fourteen sites. Although sites were spread across Europe and differed in basic characteristics and existing ways of working, a number of difficulties in delivering integrated care were similar. Existing ways of working and improvement plans mostly focused on three components of the Expanded Chronic Care Model: delivery system design; decision support; self-management. Two components were represented less frequently in existing ways of working and improvement plans: building healthy public policy; building community capacity. These findings suggest that broadly-based prevention efforts, population health promotion and community involvement remain limited. From the Expanded Chronic Care Model perspective, therefore, opportunities for improving integrated care outcomes may continue to be restricted by the narrow focus of developed improvement plans.

© 2019 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

* This paper was published on behalf of the SUSTAIN consortium: Borja Arrue, Eliva Atieno Ambugo, Caroline Baan, Jenny Billings, Simone de Bruin, Michele Calabro, Nuri Cayuelas Mateu, Sandra Degelsegger, Mireia Espallargues Carreras, Erica Gadsby, Nick Goodwin, Terje Hagen, Christina Häusler, Viktoria Hoel, Henrik Hoffmann, Usman Khan, Julie MacInnes, Federica Margheri, Jenna McArthur, Maggie Langins, Manon Lette, Lina Masana, Mirella Minkman, Giel Nijpels, Konrad Obermann, Gerli Paat-Ahi, Jillian Reynolds, Mari Rull, Georg Ruppe, Monique Spierenburg, Annerieke Stoop, Lian Stouthard, Nhu Tram, Gerald Wistow and Nick Zonneveld.

* Corresponding author at: National Institute for Public Health and the Environment (RIVM), PO Box 1, 3720 BA Bilthoven, The Netherlands.

E-mail addresses: annerieke.stoop@rivm.nl, annerieke.stoop@hotmail.com (A. Stoop), simone.de.bruin@rivm.nl (S.R. de Bruin), G.Wistow@lse.ac.uk (G. Wistow), J.R.Billings@kent.ac.uk (J. Billings), ruppe@oe pia.at (G. Ruppe), leichsenring@euro.centre.org (K. Leichsenring), konrad.obermann@medma.uni-heidelberg.de (K. Obermann), caroline.baan@rivm.nl (C.A. Baan), g.nijpels@amsterdamumc.nl (G. Nijpels).

1. Introduction

An increasing number of older people with complex needs live in their homes and communities into their later lives. Their complex needs require multidisciplinary collaboration to optimise the effectiveness of assessment and care coordination processes. Integrated health and social care models appear to provide promising approaches for organising continuous, person-centred care for older people with complex needs living at home [1–6]. We define integrated care as those initiatives that proactively seek to structure and coordinate care and support around older people's needs and in their home environments [3–5,7–10]. Numerous integrated care initiatives targeted at older people have been implemented in a wide range of settings and contexts, in and outside Europe [11–14].

Integrated care delivery is expected to have a positive impact on the quality of care and outcomes for older people, including improved satisfaction with care [15,16] and psychological health or wellbeing [17]. However, empirical evidence for the effectiveness and cost-effectiveness of integrated care is still inconclusive, partly due to the heterogeneous nature of the integrated care sites and/or the use of different outcome measures [5,18,19]. In addition to implementing new care models, literature shows that improvements to existing services are necessary to enhance their effectiveness and further improve integrated care [12,18,20–23]. This also includes the need for a greater focus on population health promotion in integrated care programs for older people [24]. Yet, knowledge of how to implement such improvements successfully remains limited, as is knowledge of how to transfer good practices and experiences to other contexts [25].

This paper reports from the cross-national research project 'SUSTAIN' (Sustainable Tailored Integrated Care for Older People in Europe) [26], which aims to address the above challenges and to accelerate improvements in integrated care for older people. In the project, established integrated care sites for older people agreed to work with SUSTAIN researchers to develop and implement plans designed to improve their existing ways of working. Throughout the project, SUSTAIN researchers followed up and evaluated the design and implementation processes and outcomes of improvement plans for each site, of which findings were reported elsewhere [27–33]. Through studying different types of integrated care sites across different European countries and settings together, the SUSTAIN project aimed to enhance understanding of what does and does not work and with what specific outcomes for integrated care across a rich and varied field of practical examples. Thereby, SUSTAIN intends to provide the basis for the transfer and application of learning about improving integrated care across Europe and elsewhere.

In order to understand outcomes and progress of implementing improvements in the integrated care sites, as a first step, insight into the existing ways of working of the sites and content of their improvement plans is essential. The aims of this paper are therefore: (i) describing and comparing the characteristics and existing ways of working of the integrated care sites participating in SUSTAIN, (ii) describing and comparing perceived limitations in their existing ways of working, and (iii) describing and comparing the content of improvement plans drawn up by each integrated care site in SUSTAIN.

2. Methods

2.1. Study design

Fourteen established integrated care sites were selected – and agreed – to participate in the SUSTAIN project. The integrated care sites were located in seven European countries: Austria, Estonia,

Germany, Norway, Spain, the Netherlands and the United Kingdom. Criteria for their selection included a primary focus on older people living at home with complex needs and the involvement of professionals from multiple health and social care disciplines. In addition, sites should be willing and committed to improve their current practice by working towards more person-centred, prevention-oriented, safe and efficient care [26]. Prior to the start of the project, SUSTAIN researchers invited integrated care sites in their countries, known to be committed to improving existing ways of working, to participate in SUSTAIN. Most sites had a longstanding partnership with one of the SUSTAIN researchers.

Local SUSTAIN research partners collaborated with the sites in each country to design and eventually implement improvement plans over an 18-month period. Improvement plans were co-created by local stakeholders and SUSTAIN researchers, and shaped by local stakeholder priorities to improve current practice in their own site. No additional resources were made available from the SUSTAIN project to contribute to funding for the costs of implementing the plans in the sites.

The SUSTAIN project team comprised two groups of research partners: 1) seven country-specific research teams, who facilitated improvement processes in two sites per country each by bringing local stakeholders together and supporting the design and implementation of improvement plans. Country-specific research teams were also responsible for monitoring the processes associated with designing and implementing local improvement plans, and evaluating how the sets of improvements impacted on care for older people, also referred to as 'site-specific evaluations'; and 2) a group of research partners responsible for the 'overarching analysis' through which findings from site-specific evaluations undertaken in the fourteen sites were compared and contrasted to identify recurring patterns in the design and implementation of integrated care improvements [34]. The latter team also led the drafting of this paper.

2.2. Data analysis

To obtain insight in the existing ways of working and characteristics of the sites, their perceived limitations and the improvement plans, all country-specific research teams were responsible for data collection and analysis in their own sites. They performed this in their own language. Based on these site-specific evaluations, they produced three sets of documents in English. As such, for each individual site, the following documents were produced:

- (i) Baseline reports: providing insight into the characteristics of each integrated care site, their perceived difficulties and limitations regarding their existing ways of working, and potential areas for improvement [35].
- (ii) Project plans: providing details on the content and implementation of the improvement plan. The plans included the sites' ambitions and rationale for improving current practice, together with the actions and resources required to implement it.
- (iii) Flow charts: depicting the existing way of working and how the improvement plan would modify it.

The three sets of documents were built on qualitative and quantitative data gathered from the sites using different data sources. Data sources included interviews (with older people receiving services, informal caregivers, professionals and managers), researchers' field notes, minutes of workshop meetings, and structured templates for uniform description of the sites and the improvement plans completed by SUSTAIN researchers and local stakeholders from the sites. More information on the principal methods used for collecting and analysing site-specific data for the

purpose of the three sets of documents can be found in an online [Appendix A](#). Because of language barriers, the group of research partners responsible for the ‘overarching analysis’ was not able to analyse site-specific data. They instead carried out content analysis of the three sets of documents produced for each site by the country-specific research teams for the current paper. The overarching analysis team reviewed all documents to describe, compare and contrast the characteristics and existing ways of working of the integrated care sites, their perceptions of difficulties and limitations regarding their current practice, and the content of improvement plans of those sites.

In the content analysis, the Expanded Chronic Care Model (ECCM) was used to provide a conceptual framework for analysing and comparing the existing ways of working and the improvement plans of the fourteen individual sites in a consistent and systematic way. The ECCM is a development of the Chronic Care Model (CCM), where the latter is a well-known model that describes the essential elements of a proactive health system capable of improving the quality of care for people with chronic diseases [3,36,37]. The CCM focused on four components of integrated working: *self-management support*; *delivery system design*; *decision support*; and *clinical information systems*. Barr et al. argued that the CCM was developed within a too narrow paradigm and that it should be extended to incorporate a broadly-based focus on prevention by including the social determinants of health, and the principles of health promotion as well as clinical prevention services [7]. As a result, Barr et al. developed the ECCM by adding three further components: *build healthy public policy*; *create supportive environments*; and *build community capacity* [7].

The ECCM was used for analysing existing ways of working and contents of improvement plans. This sought to provide insight into the extent to which existing ways of working and the improvement plans of the different sites were in alignment with the conceptualisations and ambitions of the ECCM. For the purpose of this study, the components of the ECCM were adopted to provide a common framework for identifying core characteristics of the fourteen integrated care sites. The descriptions of the components of the ECCM from the original research were subject to limited revision for adoption within the SUSTAIN project with its specific focus on care and support for older people living at home with complex needs (Table 1) [7]. The ECCM was not used as the basis or criteria for designing the improvement plans.

For this study, content analysis was conducted in different steps, based on both a deductive and inductive approach:

- (i) Relevant data on the existing ways of working and the improvement plans were extracted from the three sets of documents. Information about the existing ways of working and the content of the improvement plans for each site were coded according to the individual ECCM components (i.e. deductive approach): *self-management support*; *delivery system design*; *decision support*; *clinical information systems*; *build healthy public policy*; *create supportive environments*; and *build community capacity*. Coded data allocated to each ECCM component were then examined in order to identify and define recurring patterns in the activities across the sites. Within each ECCM component, activities were then clustered into a number of main activities (per ECCM component) to facilitate data interpretation (i.e. inductive approach). These main activities will be described in the Results section (and the Tables).
- (ii) Also relevant data on the perceived difficulties were extracted from the three sets of documents. Data were then examined in order to identify and define recurring patterns across the sites (i.e. inductive approach). The difficulties were clustered into five subcategories, which are described in the Results section.

The results obtained from this analytical process were reviewed by two members of the research team responsible for the overarching analysis (AS and GW). After the initial analyses were conducted, AS consulted members of the country-specific research teams to verify their interpretation of site-specific analysis results. This was done by sharing and discussing the tables with interpreted data with the members of these country-specific research teams at two time points. These consultations took place face-to-face (first iteration) and by e-mail and telephone calls (second iteration). Based on these consultations, AS and GW restructured and supplemented the analyses where necessary.

3. Results

3.1. Characteristics and existing ways of working of integrated care sites

The integrated care sites provided different types of care and support services including home nursing and rehabilitative care, proactive primary care for frail older people, dementia care, care for older people being discharged from hospital, and palliative (end of life) care (Table 2). Care settings and the type and number of providers varied across sites. Some consisted exclusively of medical professionals, whereas others involved broadly equal numbers of health and social care professionals. Staffing patterns were broadly similar in individual sites providing the same types of care and support services. For instance, in all proactive primary care sites, at least one GP and one (practice) nurse were involved.

Differences between sites were observed in the numbers and combinations of ECCM components identified in their existing ways of working (Table 3). Only two sites (SUR and SØN) included all seven components of the ECCM model, six (GPC, CPC, OSO, SAB, GCM and HF) included five or six out of seven ECCM components, two (RMZ and PB) included three or four components, and four (ACC, MED, WICM and O75) included only one or two components.

Differences were also observed in the types of ECCM components identified in the categorisation of existing ways of working. The components *delivery system design* and *self-management* were identified most often. All sites included actions or activities related to the *delivery system design* component. These were primarily associated with the establishment of multidisciplinary teams and the specification of the latter's internal operating processes, such as needs assessments and joint care planning mechanisms. Sites in proactive primary care were similarly underpinned by an emphasis on systematic needs assessment and case conferences. *Self-management* was primarily operationalised through the provision of information and advice to older people, and by involving them in care planning to promote shared decision-making. A number of rehabilitative care sites were specifically focused on strengthening personal capabilities to live independently at home. Most sites aimed to create *supportive environments* in the home, primarily through home safety assessments, providing assistive equipment (e.g. mobility aids) and installing adaptations to the physical environment of the home (e.g. raised toilet seat). About half of the sites addressed the ECCM components: *build and strengthen community capacity and action*; *decision support*; and *build healthy public policy*. Collaborations with community groups (for instance a patient advocacy organisation, other voluntary organisations and churches) were being developed to *build and strengthen community capacity and action*. Actions to provide *decision support* primarily focused on training and advice to professionals and volunteers within the site as well as to external stakeholders (e.g. health and social care professionals providing care and support to people with dementia). To *build healthy public policy*, the sites aimed to influence national or regional health

Table 1
Components of the Expanded Chronic Care Model [7].

Components of the ECCM	Description
Self-management/develop personal skills	Support of self-management in coping with problems older people may experience in different domains (spheres) of their lives (including physical, cognitive, psychological, social and environmental domains) and development of personal skills for health and wellbeing (e.g. self-help groups)
Decision support	Aligning strategies of all organisations involved (e.g. health care, social care, community and voluntary organisations) for dealing with problems older people may experience in different domains of their lives and supporting their health and wellbeing (e.g. training of staff to work with common tools to systematically assess older people's needs)
Delivery system design/re-orient health services	Re-orientation of health services towards adoption of a broader health promotion role alongside the provision of clinical and curative (i.e. medical) services to provide a comprehensive approach to health and wellbeing of older people (e.g. address social determinants of health and provide timely, interdisciplinary care and support as necessary)
Information systems	Creation of more comprehensive systems for information sharing to include relevant data beyond the health care system (e.g. electronic dossier accessible to all involved care and support organisations)
Build healthy public policy	Development and implementation of policies designed to improve health and wellbeing of older people (e.g. health and wellbeing impact on older people of all relevant public policies)
Create supportive environments	Generation of living conditions that are safe, stimulating, satisfying and enjoyable (e.g. efforts to maintain older people in their homes for as long as possible)
Build and strengthen community capacity and action	Support of community capacity-building so that communities are able to initiate, shape and deliver interventions and environments which directly contribute to their members' health and wellbeing, and strengthening relationships between statutory agencies and community groups and voluntary and charity organisations by collaborating to set priorities and achieve goals that contribute to community health and wellbeing (e.g. collaboration with voluntary and charity organisations).

policies, for instance through participation in national working groups and networks, or by providing service development exemplars through their status as pilot projects. *Information systems* were in place in some sites. However, none had created a comprehensive information system including all the participating care and support organisations. Instead, professionals from the same sector usually exchanged information about service users using e-mail, electronic messaging systems or electronic patient record systems.

3.2. Perceived difficulties in the existing ways of working

Several common difficulties associated with existing ways of working were reported across the fourteen sites during interviews and workshop meetings with local stakeholders from the sites. The importance of the difficulties for the sites was highly context-dependent. [Table 4](#) shows how we clustered them into five categories. The first, mentioned in almost all sites, was the difficulty they encountered in securing coordination and collaboration among the organisations and professionals participating in the site. This category included some very basic barriers such as the absence of sustainable and clear agreements about roles and responsibilities of organisations and their professional staff. In addition, a lack of knowledge about and trust in areas of expertise of different health and social care providers were observed. Co-operation between organisations providing services within the same care setting (e.g. primary care) was considered easier than co-operation between organisations from different care settings. Because of differences in cultures and visions of organisations, stakeholders from some sites specifically reported that collaboration with external stakeholders, for instance with the community and social care sectors, was weak or not yet in place despite the recognised importance of assessing and addressing the broad range of older people's needs.

A second frequently reported difficulty was the lack of information sharing within and between organisations. The absence of shared IT systems or incompatibilities between systems complicated information flows and contributed to restricted levels of communication and collaboration between professionals and organisations. A third difficulty related to limited resources and support, and particularly having to rely on temporary funding for integrated care sites with all the uncertainties about their longer term future which accompanied such funding. Its consequences influenced levels of staff recruitment and retention. Furthermore, financial barriers between the health and social care sectors were perceived as major obstacles for working in an integrated way.

Stakeholders from different sites indicated that these barriers could be partly due to absence of vision on integrated working and commitment to removing or at least minimising financial barriers at national, regional and local levels.

A fourth difficulty flowed directly from the third in the shape of the impact of staff shortages in health and social care. Professionals reported heavy workloads, and saw this factor as one which limited their motivation and capacity to participate in training programmes. A final area of difficulty was in developing better quality person-centred practice. Particular instances included limited communication with older people and their informal caregivers, lack of shared-decision making, and difficulties in tailoring services to the needs and preferences of the older person. Possible explanations given by local stakeholders were professionals' limited time availability and lack of knowledge. The fundamental nature of these limitations suggested person-centred practice in at least a number of sites was at a fairly early stage of development.

3.3. Improvement plans

In all sites, local steering groups were set up. Steering groups consisted of stakeholders who participated in the interviews and workshop meetings together with additional local stakeholders whose participation was considered relevant. During one or several meetings, depending on the site, members of these steering groups designed improvement plans with support from country-specific research teams. Sites differed in the extent to which discussing local improvement priorities and designing together improvement plans was a straightforward process. Most sites based their improvement plans on the difficulties they had identified during interviews and workshops with their research partners. However, a small number of sites drafted plans focused on issues that were based on pre-existing issues identified by managers before the workshops took place. [Table 5](#) presents twelve improvement plans including their objectives and planned actions and activities for realising them. Two sites decided to withdraw from the SUSTAIN project before the completion of the design of their improvement plan (WICM and CPC). They felt unable to design a plan with a realistic prospect of implementation due to limited staffing, restricted time and a lack of support from stakeholders.

[Table 5](#) shows that the objectives of the twelve improvement plans could be grouped according to one of two major emphases:

Table 2
Characteristics of the integrated care sites.

Country	Integrated care site	Type of care services	Objective of site	Providers involved
Austria	Gerontopsychiatric Centre (GPC)	Dementia care	To support older people suffering or suspected of suffering from mainly cognitive psychiatric disorders and their informal caregivers to live at home for as long as possible.	- Gerontopsychiatric Centre is affiliated to the Psychosocial Services unit which is part of the municipality in Vienna coordinating care and support services. - Team consists of psychiatrists, psychologists, nurses and social workers, and refers people to a wide range of health and social care organisations providing care and support.
	Coordinated Palliative Care (CPC)	Palliative care	To provide integrated palliative care services in hospitals and the community to terminally ill people and their family members.	- Coordinated Palliative Care is a coordinating organisation and an organisational unit of the Regional Hospital Holding. It coordinates mobile palliative care teams (MPCTs), which are affiliated to home care organisations and hospitals. - MPCTs consist of physicians, nurses, social workers, therapists, dietitians, volunteers, coordinators and administrators depending on users' needs.
Estonia	Alutaguse Care Centre (ACC)	Home nursing and rehabilitative care	To provide a nursing and rehabilitative programme for 21 days to support and enable older people with chronic conditions (e.g. CVD, diabetes) to return to their homes.	- Alutaguse Care Centre staff include nurses, social workers, PT, and professionals providing practical help and support. - Staff consult local family doctors and medical specialists from the hospitals when considered necessary.
Germany	Medendi (MED)	Home nursing	To provide nursing care at home to improve and maintain people's quality of life.	Medendi is a home care organisation whose staff include home nurses.
	KV RegioMed Zentrum Templin (RMZ)	Rehabilitative care	To provide a three-week rehabilitative programme to enable people to live independently at home.	- RMZ Templin is located in an outpatient department in a local hospital and is run by the regional physician association. - RMZ treatment by PT, OT, speech therapist - Professionals involved in the programme are therapists, GPs and case managers.
	Pflegewerk Berlin (PB)	Home nursing and rehabilitative care	To combine and align discharge management, long-term care, therapies, and case management to support older people to live independently at home.	- Pflegewerk Berlin is long-term care facility providing home nursing and rehabilitative care involving therapists (PT, OT, speech therapist), long-term care nurses and volunteers. - Therapists and nurses collaborate with local GPs who remain responsible for people's care and support.
Norway	Surnadal Holistic Patient Care at Home (SUR)	Home nursing and rehabilitative care	To provide inhabitants of Surnadal in need of municipal health services smooth transition between hospital, institutional, and home care, and to support them to live at home for as long as possible.	- Holistic Patient Care at Home (HPH) is part of Surnadal's municipal health services and the framework on which Surnadal's homecare services are grounded. - Holistic Patient Care at Home is a coordinated care pathway involving the hospital (for in/outpatient and emergency care) and municipal health services (rehabilitation services, short/long-term institutional stays, home services including home nursing and home assistance/support, day care, GP consults).

Table 2 (Continued)

Country	Integrated care site	Type of care services	Objective of site	Providers involved
Spain	Søndre Nordstrand Everyday Mastery Training (SØN)	Rehabilitative care and mastery of activities of daily living	To promote a sense of mastery and independence in activities of daily living of residents to enable them to live at home for as long as possible through rehabilitative care and training for about four to six weeks. Sense of mastery concerns personal control over those circumstances that are important to the life of the older people. Independence concerns ability to live as independently as possible in their own homes and communities.	• Everyday Mastery Training (EMT) is part of Søndre Nordstrand's municipal health services, involving borough's Prevention, Voluntary Services and Public Health department which closely collaborates with Home Services department. • EMT rehabilitation multidisciplinary team consists of PT, OT, nurses, and professional trainers.
	Osona Programme for Severe Chronic Patients/ Advanced chronic disease/ Geriatrics (OSO)	Proactive primary and intermediate care	To improve the integration and coordination of different services and care providers involved in care and support for people with advanced or complex chronic conditions through a shared, individualised care plan among health professionals to avoid hospital admissions, crises and risks, and enhance person-centredness of care	• Osona Programme for Severe Chronic Patients/ Advanced chronic disease/ Geriatrics is a hospital-based programme involving: one intermediate and one long-term care hospital with a specialist geriatric unit, which coordinates the site; the consortium of acute care hospitals of the area; primary care centres (including GPs and nurses who are specialised in geriatric patients, and social workers employed by Catalan Department of Health); and local government/city councils providing social services, i.e. social workers, family workers, cleaners, technical adaptations, etc.
	North Sabadell social and health care integration (SAB)	Proactive primary care	To provide proactive, integrated, holistic care and support for people with complex needs.	• North Sabadell Social and health care integration involves primary (basic) social services, i.e. social workers, and primary health care, i.e. GP and nurses, working together in Primary Care Centres.
The Netherlands	West-Friesland Geriatric Care Model (GCM)	Proactive primary care	To provide proactive and coordinated care and support to adequately address needs of frail older people living at home.	• Geriatric Care Model is a proactive care model implemented among GP practices in West Friesland, under the responsibility of the regional umbrella organisation for primary care. • GP and practice nurse collaborate with different health care professionals, such as pharmacist, PT, OT, dietitian, elderly care physician, case manager for people with dementia and community nurse, based on older people's needs.
	Walcheren Integrated Care Model (WICM)	Proactive primary care	To address needs of frail older people proactively so they can live at home for as long as possible.	• Walcheren Integrated Care Model is part of Integrated Care Foundation Zeeland which carries out multiple healthcare programmes, one of which is Walcheren Integrated Care Model involving several GP practices. • GP and practice nurse collaborate with home care organisations and consult with case managers for people with dementia and social workers.
United Kingdom	Sandgate Road Over 75 Service (O75)	Proactive primary care	To support older people with long-term conditions and complex needs to live independently at home for as long as possible and to improve the coordination of care and support around those needs.	• Sandgate Road Surgery is accountable to and funded by the regional Clinical Commissioning Group, which is an organisation that commissions local health care services. • Sandgate Road Surgery (GP practice): management by lead GP, day-to-day running by senior practice nurse; collaboration with community nurse and social services.

Table 2 (Continued)

Country	Integrated care site	Type of care services	Objective of site	Providers involved
	Swale Home First (Discharge to Assess) (HF)	Hospital discharge planning	To support the safe and efficient transfer of patients needing support and/or rehabilitation from hospital to home	• The transfer of older people from hospital to home is managed by the Kent County Council integrated discharge team based in Medway hospital. • They work closely with Medway hospital's multidisciplinary ward teams (nurses, OT, PT, clinicians), the Virgin Care Rapid Response team, and the Kent Enablement at Home (KEAH) service (provided by Kent County Council). • Key stakeholders also include Swale Clinical Commissioning Group (who commission health care services in the area), and Age UK and Swale Borough Council, both of which provide additional support services for older people.

PT: physical therapist; OT: occupational therapist; GP: general practitioner.

- (i) General improvements to local capabilities for coordination, collaboration and communication with other care and support organisations and especially by enhancing knowledge and understanding of different organisations' roles and responsibilities. Plans focused on both internal and external partners with whom collaboration was seen to be sub-optimal or non-existent. Examples of activities or actions were: meetings to improve understandings of professionals' roles and working relationships including inter-professional training based on case examples. This focus on improving inter-professional relationships was expected to improve care delivery processes at the clinical level.
- (ii) The second main approach to improvement in the plans was to focus more directly on improving specific care delivery processes. Some plans concentrated on providing care in a more person-centred way, while others focused on specific aspects of the care process such as improving case management and arrangements for hospital discharge. Other examples included: organising effective meetings between health and social care professionals, older people and their informal caregivers to shape and validate their care plans; and providing rehabilitation services at home instead of in an institution.

Five plans (SUR, SØN, OSO, SAB and O75) covered five out of seven ECCM components, three plans (ACC, PB and HF) covered four components, two plans (GPC and MED) covered three components, and two plans (RMZ and GCM) covered two components. All improvement plans included actions or activities related to *delivery system design*. These activities included the development of co-operation and communication between staff of different organisations and professions by, for example, conducting joint care reviews and establishing agreements on information sharing for individual patients. *Decision support* improvements were targeted in most improvement plans and included proposals to adopt new needs assessment templates and joint care planning frameworks to support comprehensive and person-centred ways of working. Training programmes for staff working with such tools were also included in *decision support* improvements. A smaller number of the improvement plans addressed *self-management*, *strengthening community action*, *information systems* and *creating supportive environments*. *Self-management* improvements primarily built on current ways of working such as the provision of information and advice about the availability of local services, and the involvement of older people and their informal caregivers in the development of

their care plans. Actions to *build and strengthen community capacity and action* included developing the capacity and contribution of voluntary organisations to support integrated care. *Information system* activities included the development or expansion of access to paper-based or electronic patient records for existing and/or new organisations and professionals. Under the heading of *creating supportive environments*, one project designed a resource map to expand access to advice and information services about neighborhood resources.

4. Discussion

4.1. Summary of results

The aim of this paper was to describe and compare existing ways of working, perceived limitations and plans for improvement among fourteen integrated care sites participating in SUSTAIN. Although the fourteen sites were spread across seven European countries and, to varying degrees, differed in their basic characteristics and existing ways of working, a number of the difficulties and areas for improvement were very similar. In many sites, difficulties were associated with coordination, collaboration and communication (information sharing) between different health and social care providers, together with aspects of funding, staffing levels and person-centred working. Most improvement plans were based on those difficulties, although some plans focused on pre-existing issues already identified by managers from the sites. Similarities in the objectives of improvement plans were also observed. Objectives of improvement plans could be grouped according to two major emphases: 1) improving or expanding inter-professional coordination, collaboration and communication among care and support organisations in order to more fully engage them in the site, and 2) improving the actual care delivery process including more attention to person-centred working.

4.2. Understanding these results in the context of the integrated care literature

The difficulties in existing ways of working, as identified in this study, are also observed in other studies as barriers to successful integration of care for older people across Europe [38–41]. Although knowledge about improving integrated care is yet limited, the aims and activities within the improvement projects were also found in other studies [38,39,42,43]. Coordination, collaboration and com-

Table 3
Existing ways of working of the integrated care sites.

Integrated care site	Self -management	Decision support	Delivery system design	Information systems	Build healthy public policy	Create supportive environments	Build and strengthen community capacity and action
Gerontopsychiatric Centre (GPC)	Provision of information and advice to older people (dealing with dementia, relieving caregiver burden)	Training about dementia and advice to external stakeholders about specific aspects of practice within the site	- Establishment of multidisciplinary team - Development of internal care delivery processes: needs assessments, case conferences, joint care planning, referral to a range of services outside the team, communication and information exchange between staff and services outside the team, older people and informal caregivers	N/A	Influence on national/regional health policies through participation in national working group	Referral to organisations that arrange provision of support, equipment and other enablement services to older people to live independently and safely in their own homes	Collaboration with community groups including patient advocacy organisation
Coordinated Palliative Care (CPC)	- Engagement of older people and informal caregivers in care planning to promote shared decision making - Provision of information, advice and support to older people and informal caregivers to cover, for example, the terminal phase of disease in home environments, coping with stress and grief	- Training of volunteers about specific aspects of practice within the site - Advice to external stakeholders about specific aspects of practice within the site (24/7 support)	- Establishment of multidisciplinary teams - Development of internal care delivery processes: needs assessments, support and guidance to older people and informal caregivers in the different domains of life	N/A	Influence on national/regional health policies through participation in national network	- Provision of support, equipment and other enablement services to older people to live independently and safely in own homes. - Arranging home care and support at hospital discharge - Performance of home safety assessments to evaluate safety and appropriateness of home environment at point of hospital discharge	Collaboration with community groups including the hospice association coordinating volunteers
Alutagus Care Centre (ACC)	N/A	N/A	- Establishment of multidisciplinary team - Development of internal care delivery processes: case conferencing	N/A	N/A	N/A	N/A

Table 3 (Continued)

Integrated care site	Self -management	Decision support	Delivery system design	Information systems	Build healthy public policy	Create supportive environments	Build and strengthen community capacity and action
Medendi (MED)	N/A	N/A	Development of internal care delivery processes: communication and information exchange between staff and services outside the team	N/A	N/A	N/A	N/A
KV RegioMed Zentrum Templin (RMZ)	Provision of prevention and rehabilitation services which directly reinforce capabilities for living independently at home	N/A	- Establishment of multidisciplinary team - Development of internal care delivery processes: joint care planning, case management	N/A	N/A	Provision of support, equipment and other enablement services to older people to live independently and safely in own homes	Collaboration with local authorities to make GPs in region aware of integrated care project and what it offers locally
Pflegewerk Berlin (PB)	N/A	N/A	Development of internal (care delivery) processes: individual staff members provide care and treatment to older people prescribed by staff and services outside the team	N/A	N/A	Location of accommodation for older people in apartment building, close to transport services and served by range of support services and social activities	Collaboration with community groups to enable older people to access services offered by local groups including volunteers supporting activities of daily living and social activities
Surnadal Holistic Patient Care at Home (SUR)	Engagement of older people in care planning to promote shared decision making informed by their own views about needs and goals/desired outcomes	- Detailed checklists as guides for project staff about providing comprehensive care, systematically monitoring the health status and care needs - Training of and advice to project staff about specific aspects of practice within the site	Development of internal (care delivery) processes: communication and information exchange by individual staff members and between staff and services outside the team, needs assessments, care coordination	Electronic messaging system for communication between professionals and organisations though not necessarily including all those involved	Influence on national/regional policies through providing examples of good practice developing during course of project operation	- Performance of home safety assessments to evaluate safety and appropriateness of home environment - Part subsidy of transport costs for health care services and social activities	Collaboration with community groups to enable older people to access services offered by local groups including churches providing palliative and end-of-life care, Red Cross supporting social activities and the Dementia Association

Table 3 (Continued)

Integrated care site	Self -management	Decision support	Delivery system design	Information systems	Build healthy public policy	Create supportive environments	Build and strengthen community capacity and action
Søndre Nordstrand Everyday Mastery Training (SØN)	• Provision of rehabilitation services which directly reinforce capabilities for living independently at home • Provision of training to promote skills and confidence to live independently • Engagement of older people in care planning to promote shared decision making informed by their own views about needs and goals/desired outcomes	Training of project staff about specific aspects of practice within the site such as the conduct of needs assessments	• Establishment of multidisciplinary team • Development of internal care delivery processes: needs assessments, joint care planning, communication and information exchange between by individual staff members • Rehabilitative care at home	• Electronic patient record system and electronic messaging system for communication between professionals and organisations though not necessarily all those involved	• Influence on national/regional policies through status as pilot project	• Performance of home safety assessments to evaluate safety and appropriateness of home environment • Provision of support, equipment and other enablement services to older people to live independently and safely in own homes • Part subsidy of transport costs to health care services and social activities	• Collaboration with community groups to enable older people to access services offered by local groups including the Red Cross and senior centres
Osona Programme for Severe Chronic Patients/ Advanced chronic disease/ Geriatrics (OSO)	Provision of advice to older people about medication adherence, maintaining independence and safety issues	• Training of project staff about specific aspects of practice within the site such as talking about end of life and palliative care, and providing advice on medication adherence	• Development of internal care delivery processes: communication and information exchange between individual staff members	• Separate IT systems for health and social care professionals • Electronic patient record system for communication between professionals and organisations though not necessarily all those involved	• Influence on national/regional policies through status as pioneer project, together with examples of good practice developed during course of project operation	• Performance of home safety assessments to evaluate safety and appropriateness of home environment • Provision of advice to older people to live independently and safely in own homes including safety advice and medication adherence	N/A
North Sabadell social and health care integration (SAB)	• Provision of information to older people about the availability of health and social services	N/A	• Individual staff members work in same building • Development of internal care delivery processes: communication and information exchange between individual members of staff	• Separate IT systems for health and social care professionals • Electronic patient record system for communication between professionals and organisations though not necessarily all those involved	• Influence on national/regional policies through status as pioneer project, together with examples of good practice developed during course of project operation	• Performance of home safety assessments to evaluate safety and appropriateness of home environment	• Collaboration with community groups to enable older people to access services offered by local groups including municipal services providing community activities

Table 3 (Continued)

Integrated care site	Self-management	Decision support	Delivery system design	Information systems	Build healthy public policy	Create supportive environments	Build and strengthen community capacity and action
West-Friesland Geriatric Care Model (GCM)	Engagement of older people in care planning to promote shared decision making informed by their own views about needs and goals/desired outcomes	Training of and advice to project staff about specific aspects of practice within the site such as conducting needs assessments using the RAI assessment instrument and case conferencing in complex situations	- Establishment of multidisciplinary team - Development of internal care delivery processes: needs assessments, joint care planning, care coordination, case conferencing in cases with complex needs	Needs assessments and care plans shared electronically between limited range of staff working with RAI	N/A	Performance of home safety assessments to evaluate safety and appropriateness of home environment during needs assessment	N/A
Walcheren Integrated Care Model (WICM)	Engagement of older people and informal caregivers in care planning to promote shared decision making informed by their own views about needs and goals/desired outcomes	N/A	Development of internal care delivery processes: frailty screening, needs assessment, joint care planning, case conferences, care coordination, communication and information exchange between staff and services outside the team, referrals to a range of services outside the team	N/A	N/A	N/A	N/A
Sandgate Road Over 75 Service (O75)	Provision of information and advice to older people about medication adherence and self-management	N/A	Development of internal care delivery processes: communication and information exchange between staff and services outside the team, referrals to a range of services outside the team	N/A	N/A	N/A	N/A
Swale Home First (Discharge to Assess) (HF)	Provision of support to promote skills and confidence to live independently	N/A	- Establishment of multidisciplinary hospital team and integrated discharge team - Development of internal care delivery processes: referrals to integrated discharge team, needs assessments on ward, referrals to involved organisations	Separate IT systems for health and social care professionals	N/A	Provision of support, equipment and other enablement services to older people to live independently and safely in own homes	Collaboration with community groups to enable older people to access services offered by local groups including voluntary organisations providing practical support

GP: general practitioner; N/A: not available.

Table 4
Perceived difficulties in the existing ways of working of the integrated care sites.

Coordination and collaboration	Communication and information	Resources and support	Competences, motivation, and workload professionals	Person-centred working
• Lack of coordination and integration of services, fragmentation of services, and competition between different health and social care providers • Lack of formal and sustainable agreements of collaboration with different health and social care providers • Lack of continuity of services across different sectors • Weak collaboration with regional health insurers and local governments • Inability to hire or involve specialists from outside the integrated care site • Poorly attended periodic multidisciplinary meetings • Lack of clearly defined and allocated roles and responsibilities of health and social care professionals involved • Lack of knowledge of and trust in one another's expertise • Unfamiliarity with one another's care and support services • Duplication of services and needs assessments • Lack of and unilateral leadership • Insufficient alignment between staff and management	• Lack of communication /bad information flow/conflicts between professionals within one organisation or team • Lack of communication and information sharing across care providers, in part due to limitations of care planning instrument used • Lack of shared or compatible IT system between health and social care organisations • Lack of follow-up information on service user after discharge from service • Lack of information about site's performance due to lack of systematic assessment and monitoring	• Inadequate and/or unsustainable financial resources • Lack of funding for improvements to IT infrastructure • Inadequate staffing levels • High staff turn-over • Inadequate staff hours, resulting in lack of time for training, communication with service users etc. • Fragmentation of budgets resulting in weak collaboration with other health and social care providers • Unsupportive regional legal framework, hindering cross-sector joint efforts between local social services, health and other institutions • Unclear national policies regarding municipal health services • Non-supportive national policy	• Lack of training and education opportunities for staff about, for example, shared-decision-making and user empowerment • Weak learning culture among staff • Weak staff motivation • Heavy workload of staff • Lack of acknowledgment of staff	• Lack of coordinated, systematic and person-centred needs assessment and joint care planning • Insufficient involvement of users and informal caregivers in the care process (e.g. lack of shared decision-making) • Difficulties in tailoring services to the needs and wishes of the older person • Limited time to communicate with service users • Inadequate information provision about available services towards older people and their informal caregivers • Lack of informal caregiver support (respite care) • Lack of mobility and transportation opportunities, resulting in poor access to health and social care services • Insufficient attention to topics related to safety of older people

munication and person-centred working were recognised in the fourteen sites participating in SUSTAIN as frequent shortcomings in their existing ways of working as well as constituting priority themes in most of the improvement plans. In contrast, limited (financial) resources and staff shortages, though frequently mentioned as important difficulties, were not explicitly addressed in the improvement plans. Such issues are more generally within the remit and influence of “higher level” policy-makers and decision-makers than staff of local projects [41,44,45]. The improvement plans' focus on improving person-centred care and better communication and collaborative practice between local stakeholders can, therefore, be considered consistent with their day-to-day experiences of delivering care and the improvement routes open to personnel at their level. Knowledge about the impact of sufficient (financial) resources or lack of (financial) resources on the objectives and content of improvement plans is still limited. Also in our research proposal, financial data or information about funding for integrated working to gain this insight was not included. We suggest it might be a priority for future research on improving integrated care [46–49].

The need for improved coordination, collaboration and communication, are also important themes in earlier studies on integrated care [38,39,50]. As observed in this and earlier studies, working towards good inter-professional collaboration requires knowledge, understanding and communication about one another's roles, responsibilities and expertise [38,39,50]. The joint development of care plans and the opportunities for more frequent communication

provided by multidisciplinary meetings can be necessary building blocks for improving collaboration [51]. There is also evidence from other studies, as from this one, highlighting the importance of sharing personal data about individuals' health and wellbeing, and the development of joint care plans across organisational and professional boundaries [52,53]. In this context, shared data systems or other IT strategies may support communication and patient information exchange [38,51]. In the SUSTAIN sites, however, data sharing and communication were impeded, as in other programmes, by incompatibilities between IT systems together with data-protection and privacy concerns. Overcoming these challenges has been found to be difficult in earlier studies [38,50]. However, increasing attention to digital solutions in care may generate more technical options and support for shared data systems and other information technology that enable communication and knowledge transfer in integrated care. Policy-makers should therefore concentrate on technological infrastructures that enable seamless data sharing together with robust data protection and that can be operated through inter-operable (national) digital systems to support well-coordinated integrated care systems.

Actions and activities related to the ECCM components *delivery system design*, *decision support* and *self-management* were most frequently found in the improvement plans. To the best of our knowledge, no other studies used the ECCM to describe ways of working of integrated care programmes and the content of improvement plans. Other studies in which CCM components were used to describe such programmes also primarily included

Table 5
Improvements plans of the integrated care sites.

Site	Objective improvement project	Self -management	Decision support	Delivery system design	Information systems	Build healthy public policy	Create supportive environments	Strengthen community action
Gerontopsychiatric Centre (GPC)	To improve detection of dementia cases and improve case- and discharge management of hospitalised people identified with a cognitive disorder	Provision of information about suspicion of dementia and availability of local services to support early diagnosis, early intervention and prevention	Information/ training programmes for external stakeholders including hospital staff	Development of cooperation and communication between staff of different organisations and professions by extending collaboration with hospitals, collaboratively identified and provided support for people identified with a cognitive disorder, collaboration agreements on sharing information	N/A	N/A	N/A	N/A
Alutaguse Care Centre (ACC)	To develop a person-centred way of working by engaging older people, informal caregivers and multidisciplinary team in process of defining goal-directed nursing plan	- Development of needs assessment template incorporating user-defined needs, preferences and goals to empower user decision making in care planning processes - Involvement of users and informal caregivers in development, implementation and evaluation of care plans, including development of priorities and goals in joint plan	- Adoption of new needs assessment template and joint care planning framework to support harmonised and person-centred ways of working - Comprehensive, multidisciplinary staff training programme in person-centred working using new assessment and care planning processes, and working with new template for assessment and care planning	Development of cooperation and communication between staff of different organisations and professions by joint needs assessments, joint care planning, joint care reviews	Development of local information system for file storing and data exchange to which all professionals have access	N/A	N/A	N/A

Table 5 (Continued)

Site	Objective improvement project	Self-management	Decision support	Delivery system design	Information systems	Build healthy public policy	Create supportive environments	Strengthen community action
Medendi (MED)	To increase the engagement of older people, informal caregivers and different professionals in development of joint care plan; and to support information exchange on older people's situation, needs and objectives between older people, informal caregivers and professionals	• Involvement of users in development of care plans, including development of priorities and goals in joint plan • Provision of information about availability of local services	• Adoption of new needs assessment template and joint care planning framework to support comprehensive and person centred ways of working • Comprehensive, multidisciplinary, staff training programme in person-centred working using new assessment and care planning processes	• Development of cooperation and communication between staff of different organisations and professions by joint care planning, collaboration agreements on sharing information from assessments, collaboratively provided care	N/A	N/A	N/A	N/A
KV RegioMed Zentrum Templin (RMZ)	To enable people with care needs, including those who completed the complex therapy programme, to receive the right services by providing information and advice on available care and support services	N/A	N/A	• Co-location of staff from many disciplines in a coordination and consulting service centre providing case management, expert consultancy and discharge-management • Development of cooperation and communication between staff of different organisations and professions by: regular meetings; collaboratively provided care; and joint care reviews	N/A	N/A	N/A	• Service centre as hub site to provide single point of access to services and advice • Development of broad support network in the community comprising municipality, seniors council, social and home health organisations, therapist practices and volunteer organisations, to promote the service to people in the region

Table 5 (Continued)

Site	Objective improvement project	Self-management	Decision support	Delivery system design	Information systems	Build healthy public policy	Create supportive environments	Strengthen community action
Pflegewerk Berlin (PB)	To improve inter-professional case management and multidisciplinary collaboration between GPs and healthcare therapists/nurses by transferring prescription-competence from GPs to healthcare therapists and nurses; and to establish formalised interactions and communication space among formal and informal caregivers	N/A	• Good practice reflection and information sharing workshops across different professional groups	• Development of cooperation and communication between staff of different organisations and professions by collaboration agreements on prescribing medical devices, therapeutic appliances, specific therapy and frequency of treatment units	N/A	• Communication about role of therapists in long term care to national and regional long term care/policy communities	N/A	• Building of capacity and contribution of voluntary organisations/volunteers by promoting structured contacts between volunteers and professional staff
Surnadal Holistic Patient Care at Home (SUR)	To expand and improve healthcare services delivered at home	• Development of needs assessment template incorporating user-defined needs, preferences and goals to empower user decision making in care planning processes • Rehabilitation at home instead of institutions to enable more independent living in own home environment	• Comprehensive, multidisciplinary staff training programme in person-centred working to develop staff capabilities in empowering older people to participate in shared decision making	• Development of cooperation and communication between staff of different organisations and professions by providing rehabilitation in user's homes, expansion of day centre capacity, collaboration agreements on sharing information from observations, collaboratively provided care: accompanying users to GP for medication review and GP consultation two weeks post discharge, proactive needs assessments	• Access to electronic patient record system for day centre staff	N/A	• Provision of care and support in own homes instead of institutions	N/A

Table 5 (Continued)

Site	Objective improvement project	Self-management	Decision support	Delivery system design	Information systems	Build healthy public policy	Create supportive environments	Strengthen community action
Søndre Nordstrand Everyday Mastery Training (SØN)	To increase sense of mastery, reduce reliance on traditional care services, and maintain and encourage good functional ability and social participation among users post Everyday Mastery Training (EMT) service provision	• Provision of information, advice about and support to make use of availability of local services to support early diagnosis, early intervention and prevention through, for example, low threshold and voluntary services • Utilisation of different media to extend reach of information provided (Senior Info service, screens in central places)	• Information for external stakeholders, such as municipal health staff, about the range of local services available	• Development of cooperation and communication between staff of different organisations and professions by structured collaboration between health staff and low threshold services, provision of information about and promotion to people to make use of availability of local services (low-threshold and voluntary services)	N/A	N/A	• Promotion of social interaction in local communities through expansion of services external to the site such as voluntary and low-threshold provision	• Building of capacity and contribution of voluntary organisations/volunteers by expanding voluntary sector activities
Osona Programme for Severe Chronic Patients/ Advanced chronic disease/ Geriatrics (OSO)	To improve person-centredness of care by conducting a standard, multidimensional joint assessment and elaborating a shared individualised care plan (PIIC plus) among involved health care and social care professionals and the user and informal caregivers	• Involvement of users in development of care plans, including development of priorities and goals in joint plan	• Comprehensive multidisciplinary staff training programme in person-centred working and joint care planning using new assessment and care planning processes to develop staff capabilities in empowering older people to participate in shared decision making	• Development of cooperation and communication between staff of different organisations and professions by joint user visits, joint needs assessments, joint care planning, collaboration agreements on sharing information; the existing care plan to be enhanced by person-centred information from joint care plan	• Introduction of user consent for information exchange and document sharing between different professionals • Sharing printed copies of care plans with social workers	N/A	• Expansion of advice on e.g. safety and other aspects of maintaining independence	N/A

Table 5 (Continued)

Site	Objective improvement project	Self-management	Decision support	Delivery system design	Information systems	Build healthy public policy	Create supportive environments	Strengthen community action
North Sabadell social and health care integration (SAB)	To establish a systematic, multidimensional assessment and care plan tailored to complex needs of each user and to establish care plans that people feel knowledgeable and active about, targeted at those unknown to social services	• Provision of support for older people through workshops and training about e.g. empowerment, safety, social relationships and accepting personal limitations • Involvement of users in development, of care plans, including development of priorities and goals in joint plan • Provision of information and advice about availability of local services to support early diagnosis, early intervention and prevention • Utilisation of different media to extend reach of information provided through the resource map	• Comprehensive, multidisciplinary staff training programming in person-centred working and joint care planning using new assessment and care planning processes to develop staff capabilities in empowering older people to participate in shared decision making	• Development of cooperation and communication between staff of different organisations and professions by joint nomination of eligible people, joint needs assessment, joint care planning, joint visits, collaboratively provided care	• Introduction of user consent for information exchange and document sharing between different professionals • Sharing printed copies of care plans with social workers	N/A	• Expansion of advice and information services about neighbourhood resources through resource map • Performance of preventative home safety assessments to evaluate safety and appropriateness of home environment among people not known yet to social services	N/A
West-Friesland Geriatric Care Model (GCM)	To improve collaboration between professionals involved in GCM (GP and practice nurse) and case manager and community social care team to adequately address older people's complex needs; to improve professionals' person-centred way of working; and to make further collaboration agreements between staff	N/A	• Implementation of good practice reflection and information sharing workshops about person-centred ways of working across different professionals groups • Implementation of exercises to improve understanding of roles and responsibilities, and build working relationships across different professionals groups	• Development of cooperation and communication between staff of different organisations and professions by joint care reviews, which were to be extended to members of community social care team; collaboration agreements on sharing information from assessments	N/A	N/A	N/A	N/A

Table 5 (Continued)

Site	Objective improvement project	Self -management	Decision support	Delivery system design	Information systems	Build healthy public policy	Create supportive environments	Strengthen community action
Sandgate Road Over 75 Service (O75)	To keep older people with long-term conditions and complex needs at home independently for as long as possible and to improve care coordination across existing services around these people	• Emphasis on prevention by including both people managing well and severely frail people in service • Provision of information and advice about availability of local services to support early, diagnosis, early intervention and prevention • Support for older people and informal caregivers in e.g. healthy lifestyle preventing, falls, self-management, medication adherence, confidence building	• Comprehensive, multidisciplinary staff training programme in frailty and the use of Dalhousie frailty screening tool	• Development of cooperation and communication between staff of different organisations and professions by extending collaboration with health and social care and community organisations, joint frailty screening, trusted assessor model, coordinated needs assessment and referral to involved services, collaboratively provided care, joint care reviews, regular review of people's situation and needs	N/A	N/A	• Creation of supportive environments through improved identification and coordination, including collaboration with voluntary organisations providing care and support, equipment and with other enablement services	• Building of capacity and contribution of voluntary organisations/volunteers by their inclusion as key stakeholders in the site, developing formal structures for collaboration and coordination between public and voluntary organisation providing support for users and informal caregivers
Swale Home First (Discharge to Assess) (HF)	To ensure medically optimised hospitalised people are able to be discharged straight home with the right support; and to make the person's discharge smoother, quicker and safer by moving to a single assessment	N/A	• Delegation of overarching care plan including goals between different professional groups	• Development of cooperation and communication between staff of different organisations and professions by single assessment form (triage at ward, complete needs assessment at home), collaboratively provided care • Reinforcing of communication between different multidisciplinary teams comprising ward teams, integrated discharge team, community service providers	N/A	N/A	• Provision of care and support and needs assessment in own homes instead of institutions to enable living in own home environment and provide the most appropriate equipment, advice and support to help ensure user's safety and wellbeing	• Building of capacity and contribution of voluntary organisations/volunteers by expanding referrals to voluntary organisations providing support for users and informal caregivers

GP: general practitioner.

activities related to *delivery system design* and/or *self-management* [5,6,54,55]. The incorporation of actions and activities related to these components suggest a collective recognition among local projects of the need to work towards better inter-professional and inter-organisational collaboration and communication, and also towards the empowerment of older people and informal caregivers.

However, actions and activities related to the three additional components of the ECCM (*build healthy public policy*, *create supportive environments*, and *build and strengthen community capacity and action*), and most especially actions related to *building healthy public policy*, were found in only a smaller number of existing ways of working and improvement plans. As mentioned, the ECCM, rather than the CCM, was used to provide a framework for describing and comparing the integrated care sites in SUSTAIN. The ECCM incorporated a broadly-based focus on prevention by including the social determinants of health, and the principles of health promotion as well as clinical prevention services [7]. The additional ECCM components reflected the need for closer associations between health service systems and the community, including social care and the voluntary sector. As such, the ECCM was consistent with the criteria we developed for inviting integrated care sites to participate in the SUSTAIN project, being broadly-based prevention and involvement of community services [26], and therefore thought to be suited better to this study. However, our analysis showed that integrated care sites were more often underpinned by components from the CCM than by the additional ECCM components. Thus we concluded that most of the sites in our study did not appear to have adopted the approaches based on addressing social determinants of health, population health promotion and community capacity building that the ECCM and its evidence base suggest are necessary for optimising integrated care. Similar limitations have also been recognised in earlier studies [24]. A possible reason may be the composition of groups of stakeholders involved in developing the improvement plan, which were particularly medically focused and lacked representation from health promotion practitioners. Merging population health promotion with clinical health care services may yet contribute to improved outcomes for older people and their informal caregivers [7]. As such, the under-representation of ECCM components highlights the need for greater attention to the population and community-oriented elements within integrated care for older people with complex needs [24,56]. Further knowledge about how to incorporate population health promotion and enhanced community participation into integrated care models appears to be required.

4.3. Strengths and limitations of data collection and analysis

Comparison of integrated care sites across different countries and care settings, necessarily poses methodological challenges. Accordingly, the country-specific research teams were expected to employ common templates for data collection and analysis. Although small variations in the way data were collected were observed, no significant differences were found, which provides a reasonable degree of confidence about the consistency of our approach. To understand the coherence between individual data sources for each site and to overcome issues with different languages in which data have been collected, the overarching analysis team conducted content analysis of documents provided by the country-specific research team. The reliability and validity of our findings were also tested, as described above, by checking the results from the overarching analysis with country-specific research teams and their local sites. In all these ways, therefore, the SUSTAIN project sought to mitigate the challenges posed by its multiple sources of data, and multiple contexts as well as the different (methodological) backgrounds of its research partners.

In addition to collecting and analysing site-specific data, country-specific research teams also collaborated with local stakeholders to facilitate the design of the improvement plans. The potential risks to methodological rigour of this dual role should be acknowledged [26]. SUSTAIN's approach had anticipated this by distinguishing two types of research partners. The overarching analysis team consulted members of the country-specific research teams about the sites in their countries, which was intended to mitigate these potential risks by reinforcing their scientific distance from their data as well as creating space for critical reflection on their own role in the research process.

4.4. Conclusion

Integrated care sites across Europe that sought to implement improvements were found to experience similar challenges in their existing ways of working. Improvement plans to address the challenges tended to have one of two different emphases: 1) improvement of local stakeholder communications and collaborative processes, leading indirectly to improvements in care delivery, and 2) direct improvement in care delivery systems and tools. Adoption of the ECCM model as a tool for cross-site comparison suggested that, in the main, the sites did not draw on the perspectives and approaches associated with broader approaches to prevention, population health promotion and community involvement. Greater attention to the population and community-oriented elements within integrated care for older people with complex needs may bring the development of integrated care a step further.

Author statement

All authors were involved in the development of the SUSTAIN methodology and contributed to the study concept and design. AS was responsible for requesting site-specific data and consulting country-specific research teams. AS and GW analysed and interpreted the data and developed the structure of the paper. AS drafted the manuscript and GW, SdB, JB, GR, KL, KO, CB and GN critically revised the manuscript. All authors read and approved the final manuscript.

Declaration of Competing Interest

None.

Acknowledgements

This study is part of the SUSTAIN project which is funded under Horizon 2020 – the Framework Programme for Research and Innovation (2014–2020) from the European Commission under grant agreement No. 634144. The content of this paper reflects only the authors' views. The European Union is not liable for any use that may be made of the information contained herein.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.healthpol.2019.09.009>.

References

- [1] Gress G, Baan CA, Calnan M, Dedeu T, Groenewegen P, Howson H, et al. Co-ordination and management of chronic conditions in Europe: the role of primary care - position paper of the European Forum for Primary Care. *Quality in Primary Care* 2009;17(1):75–86.

- [2] Mattke S, Seid M, Ma S. Evidence for the effect of disease management: is \$1 billion a year a good investment? *American Journal of Managed Care* 2007;13(12):670–6.
- [3] Wagner EH, Bennett SM, Austin BT, Greene SM, Schaefer JK, Vonkorff M. Finding common ground: patient-centeredness and evidence-based chronic illness care. *Journal of Alternative and Complementary Medicine* 2005;11:S7–15.
- [4] Boulton C, Green AF, Boulton LB, Pacala JT, Snyder C, Leff B. Successful models of comprehensive care for older adults with chronic conditions: evidence for the Institute of Medicine's "retooling for the aging America" report. *Journal of the American Geriatric Society* 2009;57(12), 2328–237.
- [5] De Bruin SR, Versnel N, Lemmens LC, Molema CC, Schellevis FG, Nijpels G, et al. Comprehensive care programs for patients with multiple chronic conditions: a systematic literature review. *Health Policy* 2012;107(2–3):108–45.
- [6] Hopman P, De Bruin SR, Forjaz MJ, Rodriguez-Blazquez C, Tonnara G, Lemmens LC, et al. Effectiveness of comprehensive care programs for patients with multiple chronic conditions or frailty: a systematic literature review. *Health Policy* 2016;120(7):818–32.
- [7] Barr VJ, Robinson S, Marin-Link B, Underhill L, Dotts A, Ravensdale D, et al. The expanded Chronic Care Model: an integration of concepts and strategies from population health promotion and the Chronic Care Model. *Hospital Quarterly* 2003;7(1):73–82.
- [8] Epping-Jordan JE, Pruitt SD, Bengoa R, Wagner EH. Improving the quality of health care for chronic conditions. *Quality & Safety in Health Care* 2004;13(4):299–305.
- [9] Raleigh V, Bardsley M, Smith P, Wistow G, Wittenberg R, Erens B, et al. Integrated care and support pioneers: indicators for measuring the quality of integrated care. *Policy Innovation Research Unit (PIRU)*; 2014.
- [10] Minkman MMN. Developing integrated care: towards a development model for integrated care. *Deventer: Kluwer Bedrijfswetenschappen*; 2012.
- [11] Van der Heide I, Snoeijs S, Melchiorre MG, Quattrini S, Boerma W, Schellevis FG, et al. Innovating care for people with multiple chronic conditions in Europe: an overview. *Utrecht: Nivel*; 2015.
- [12] Noordman J, Van der Heide I, Hopman P, Schellevis FG, Rijken M. Innovative health care approaches for patients with multi-morbidity in Europe. *Utrecht: Nivel*; 2015.
- [13] Kodner DL, Kyriacou CK. Fully integrated care for frail elderly: two American models. *International Journal of Integrated Care* 2000;1:e08, <http://dx.doi.org/10.5334/ijic.11>.
- [14] Hébert R, Durand PJ, Dubuc N, Tourigny A. PRISMA: a new model of integrated service delivery for the frail older people in Canada. *International Journal of Integrated Care* 2003;3:e08.
- [15] Baxter S, Johnson M, Chambers D, Sutton A, Goyder E, Booth A. The effects of integrated care: a systematic review of UK and international evidence. *BMC Health Services Research* 2018;18(1):350.
- [16] Stokes J, Panagioti M, Alam R, Checkland K, Cheraghi-Sohi S, Bower P. Effectiveness of case management for 'at risk' patients in primary care: a systematic review and meta-analysis. *PLoS One* 2015;10(7):e0132340.
- [17] You EC, Dunt D, Doyle C, Hsueh A. Effects of case management in community aged care on client and carer outcomes: a systematic review of randomized trials and comparative observational studies. *BMC Health Services Research* 2012;12(1):395.
- [18] Hoogendijk EO. How effective is integrated care for community-dwelling frail older people? The case of the Netherlands. *Age and Ageing* 2016;45(5):585–8.
- [19] Busetto L, Luijkx K, Vrijhoef HJM. Advancing integrated care and its evaluation by means of a universal typology. *International Journal of Care Coordination* 2017;20(1–2):41–4.
- [20] Onder G, Palmer K, Navickas R, Jurevičienė E, Mammarella F, Strandzheva M, et al. Time to face the challenge of multimorbidity. A European perspective from the joint action on chronic diseases and promoting healthy ageing across the life cycle (JA-CHRODIS). *European Journal of Internal Medicine* 2015;26(3):157–9.
- [21] Banerjee S. Multimorbidity – older adults need health care that can count past one. *The Lancet* 2015;385(9968):587–9.
- [22] Blom J, Den Elzen W, Van Houwelingen AH, Heijmans M, Stijnen T, Van den Hout W, et al. Effectiveness and cost-effectiveness of a proactive, goal-oriented, integrated care model in general practice for older people. A cluster randomised controlled trial: Integrated Systematic Care for older People—the ISCOPE study. *Age and Ageing* 2016;45(1):30–41.
- [23] Looman WM, Huijsman R, Fabbriotti IN. The (cost-) effectiveness of preventive, integrated care for community-dwelling frail older people: a systematic review. *Health & Social Care in the Community* 2018, 0(0).
- [24] Drouin H, Walker J, McNeil H, Elliott J, Stolee P. Measured outcomes of chronic care programs for older adults: a systematic review. *BMC Geriatrics* 2015;15(139).
- [25] Leichsenring K, Billings J, Nies H, editors. Long-term care in Europe - improving policy and practice. Basingstoke: Palgrave Macmillan; 2013.
- [26] De Bruin SR, Stoop A, Billings JR, Leichsenring K, Ruppe G, Tram N, et al. The SUSTAIN project: a European study on improving integrated care for older people living at home. *International Journal of Integrated Care* 2018;18(1), <http://dx.doi.org/10.5334/ijic.3090>.
- [27] Ambugo EA, Hoel V, Hagen TP. Sustainable tailored integrated care for older people in Europe (SUSTAIN-project): lessons learned from improving integrated care in Norway. Oslo: University of Oslo; 2018.
- [28] Billings JR, Gadsby E, MacInnes J. Sustainable tailored integrated care for older people in Europe (SUSTAIN-project): lessons learned from improving integrated care in the United Kingdom. *Canterbury: University of Kent*; 2018.
- [29] De Bruin SR, Lemmens LC, Baan CA, Stoop A, Lette M, Boersma M, et al. Sustainable tailored integrated care for older people in Europe (SUSTAIN-project): lessons learned from improving integrated care in the Netherlands. Bilthoven/Amsterdam/Utrecht: National Institute for Public Health and the Environment (RIVM), VU University Medical Center, Vilans; 2018.
- [30] Häusler C, Ruppe G. Sustainable tailored integrated care for older people in Europe (SUSTAIN-project): lessons learned from improving integrated care in Austria Vienna: Austrian Interdisciplinary Platform on Ageing / OEPIA; 2018.
- [31] Hoffmann H, Kamann D, Drews J, Claußen JP. Sustainable tailored integrated care for older people in Europe (SUSTAIN-project): lessons learned from improving integrated care in Germany. Hamburg: Stiftung Gesundheit Fördergemeinschaft e.V., KV RegioMed Zentrum Templin, Pflegewerk Berlin; 2018.
- [32] Reynolds J, Masana L, Cayuelas Mateu N, Espallargues Carreras M. Sustainable tailored integrated care for older people in Europe (SUSTAIN-project): lessons learned from improving integrated care in Catalonia (Spain). Barcelona: Agency for Health Quality and Assessment of Catalonia (AQuAS); 2018.
- [33] Rull M, Tambaum T, Vainre M, Paat Ahi G. Sustainable tailored integrated care for older people in Europe (SUSTAIN project): lessons learned from improving integrated care in Estonia. Tallinn: Praxis Centre for Policy Studies Foundation; 2018.
- [34] Yin R. Case study research: design and methods. Sage Publications Inc; 2013.
- [35] Arrue B, Ambugo EA, Baan CA, Barbaglia G, Billings J, De Bruin SR, et al. Integrated care for older people living at home: current situation and ambition of sites participating in the SUSTAIN project. Vienna: Austrian Interdisciplinary Platform on Ageing / OEPIA; 2016.
- [36] Robert Wood Johnson Foundation. Available from: Improving chronic illness care; 2019 <http://www.improvingchroniccare.org>.
- [37] Wagner EH, Austin BT, Davis C, Hindmarsh M, Schaefer J, Bonomi A. Improving chronic illness care: translating evidence into action. *Health Affairs* 2001;20(6):64–78.
- [38] Ling T, Brereton L, Conklin A, Newbould J, Roland M. Barriers and facilitators to integrating care: experiences from the English Integrated Care Pilots. *International Journal of Integrated Care* 2012;12:e129.
- [39] Goodwin N, Dixon A, Anderson G, Wodchis W, London Providing integrated care for older people with complex needs: lessons from seven international case studies; 2014.
- [40] Cameron A, Lart R, Bostock L, Coomber C. Factors that promote and hinder joint and integrated working between health and social care services: a review of research literature. *Health & Social Care in the Community* 2014;22(3):225–33.
- [41] Erens B, Wistow G, Mounier-Jack S, Douglas N, Jones L, Manacorda T, et al. Early evaluation of the integrated care and support pioneers programme; 2016.
- [42] RAND Europe EaYL. National evaluation of the department of health's integrated care pilots. Appendix G. Overview of integrated care pilot sites. United Kingdom: RAND Europe, Ernst & Young LLP; 2012.
- [43] Breton M, Gray CS, Sheridan N, Shaw J, Parsons J, Wankah P, et al. Implementing community based primary healthcare for older adults with complex needs in Quebec, Ontario and New-Zealand: describing nine cases; 2017, 17(2).
- [44] Wodchis WP, Dixon A, Anderson GM, Goodwin N. Integrating care for older people with complex needs: key insights and lessons from a seven-country cross-case analysis. *International Journal of Integrated Care* 2015;15(6).
- [45] Howitt P, Darzi A. Integrated care cannot be designed in Whitehall. *Integrated Journal of Integrated Care* 2012;12(2).
- [46] Stokes J, Struckmann V, Kristensen SR, Fuchs S, van Ginneken E, Tsiachristas A, et al. Towards incentivising integration: a typology of payments for integrated care. *Health Policy* 2018;122(9):963–9.
- [47] Stokes J, Lau Y-S, Kristensen SR, Sutton M. Does pooling health & social care budgets reduce hospital use and lower costs? *Social Science & Medicine* 2019;232:382–8.
- [48] Robinson JC. Theory and practice in the design of physician payment incentives. *The Milbank Quarterly* 2001;79(2):149–77.
- [49] Struijs JN, Baan CA. Integrating care through bundled payments – lessons from the Netherlands. *The New England Journal of Medicine* 2011;364(11):990–1.
- [50] Sorensen M, Stenberg U, Garnweidner-Holme L. A scoping review of facilitators of multi-professional collaboration in primary care. *International Journal of Integrated Care* 2018;18(3):13.
- [51] Van Dongen JJJ. Interprofessional collaboration in primary care teams: development and evaluation of a multifaceted programme to enhance patient-centredness and efficiency. Maastricht: Maastricht University; 2017.
- [52] Grooten L, Borgersmans L, Vrijhoef HJM. An instrument to measure maturity of integrated care: a first validation study. *International Journal of Integrated Care* 2018;18(1).
- [53] Goodwin N, Stein V, Amelung V. What is integrated care? In: Amelung V, Stein V, Goodwin N, Balicer R, Nolte E, Suter E, editors. Handbook integrated care. Cham: Springer International Publishing; 2017. p. 3–23.
- [54] Lemmens LC, Molema CCM, Versnel N, Baan CA, de Bruin SR. Integrated care programs for patients with psychological comorbidity: a systematic review and meta-analysis. *Journal of Psychosomatic Research* 2015;79(6):580–94.
- [55] Busetto L, Luijkx KG, Elissen AM, Vrijhoef HJ. Intervention types and outcomes of integrated care for diabetes mellitus type 2: a systematic review. *Journal of Evaluation in Clinical Practice* 2016;22(3), 299–10.
- [56] Van der Vlegel-Brouwer W. Integrated healthcare for chronically ill. Reflections on the gap between science and practice and how to bridge the gap. *International Journal of Integrated Care* 2013;17(3).