Research and Theory

Project INTEGRATE - a common methodological approach to understand integrated health care in Europe

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Abstract

Background: The use of case studies in health services research has proven to be an excellent methodology for gaining in-depth understanding of the organisation and delivery of health care. This is particularly relevant when looking at the complexity of integrated health-care programmes, where multifaceted interactions occur at the different levels of care and often without a clear link between the interventions (new and/or existing) and their impact on outcomes (in terms of patients health, both patient and professional satisfaction and cost-effectiveness). Still, integrated care is seen as a core strategy in the sustainability of health and care provision in most societies in Europe and beyond. More specifically, at present, there is neither clear evidence on transferable factors of integrated care success nor a method for determining how to establish these specific success factors. The drawback of case methodology in this case, however, is that the in-depth results or lessons generated are usually highly context-specific and thus brings the challenge of transferability of findings to other settings, as different health care systems and different indications are often not comparable. Project INTEGRATE, a European Commission-funded project, has been designed to overcome these problems; it looks into four chronic conditions in different European settings, under a common methodology framework (taking a mixed-methods approach) to try to overcome the issue of context specificity and limited transferability. The common methodological framework described in this paper seeks to bring together the different case study findings in a way that key lessons may be derived and transferred between countries, contexts and patient-groups, where integrated care is delivered in order to provide insight into generalisability and build on existing evidence in this field.

Methodology: To compare the different integrated care experiences, a mixed-methods approach has been adopted with the creation of a common methodological framework (including data collection tools and case study template report) to be used by the case studies for their analyses.

Methods of analysis: The four case studies attempt to compare health care services before and after the 'integration' of care, while triangulating the findings using quantitative and qualitative data, and provide an in-depth description of the organisation and delivery of care, and the impact on outcomes. The common framework aims to allow for the extraction of key transferable learning from the cases, taking into account context-dependency.

Conclusion: The application and evaluation of the common methodological approach aim to distill and identify important elements for successful integrated care, in order to strengthen the evidence base for integrated care (by facilitating cross-context comparisons), increase the transferability of findings from highly context-specific to other settings and lead to concrete and practical policy and operational recommendations.

Keywords

Introduction

The concept of integrated care is widely used in different health systems in different ways, while a common universally accepted definition is absent. '*Project INTEGRATE - Benchmarking Integrated Care for better Management of Chronic and Age-related Conditions in Europe*' [1] is a collaborative project under the European Commission Seventh Framework Programme (FP7) that aims to define what constitutes good quality integrated care provision, by gaining valuable insights into integrated care especially in terms of care process design, service delivery, professional skills mix, patient involvement, funding flows, regulatory conditions and enabling information communication technology. Further learning in these areas will help to create and improve connectivity, alignment and collaboration within and between the health and social care sectors, and thus bring benefits to patients, as well as to European health and social security systems faced with the challenges of an ageing population and an increase in chronic conditions.

To ensure a common understanding and improve the conceptualisation of the entire process, Project INTEGRATE uses Kodner's definition of integrated care: '*a coherent set of methods and models on the funding, administrative, organisational, service delivery and clinical levels designed to create connectivity, alignment and collaboration within and between the cure and care sectors*' [2]. The Project is organised into three phases as follows:

Phase 1: A conceptual framework and common methodological framework is developed to support the development (and later cross-comparisons) of four different case study reports.

Phase 2: Building on the four case studies, Project INTEGRATE looks into range of 'horizontal'/'cross-cutting' items, as they emerge. These items, considered by the literature as crucial for integrated care [3–5], form part of the main components of integrated health systems [6]: *process management, human resources management, financial flows, patients' involvement and information communication technology management*.

Phase 3: Phase 1 and 2 findings are contrasted with international evidence and feed into operational and policy recommendations to support the development, adoption and successful management of integrated care in other settings.

Project INTEGRATE looks into four different integrated care settings across four countries, which include two disease-pathways and two general care co-ordination conditions. The selected disease and care co-ordination concepts address several conditions - chronic obstructive pulmonary disease (COPD), diabetes, geriatric condition and mental care - that are among those with a high epidemiologic importance and high economic burden on health systems [7,8]. Regarding country selection, two different types of national health systems (Spain and Sweden) and health insurance systems (the Netherlands and Germany) are being considered. The rationale for these choices are that these experiences are likely to demonstrate different models for integrated care success and thorough comparing and contrasting project findings, reveal common key success factors as well as the 'context'-specific success factors (Figure 1 for a visual representation of the different elements Project INTEGRATE aims to compare).
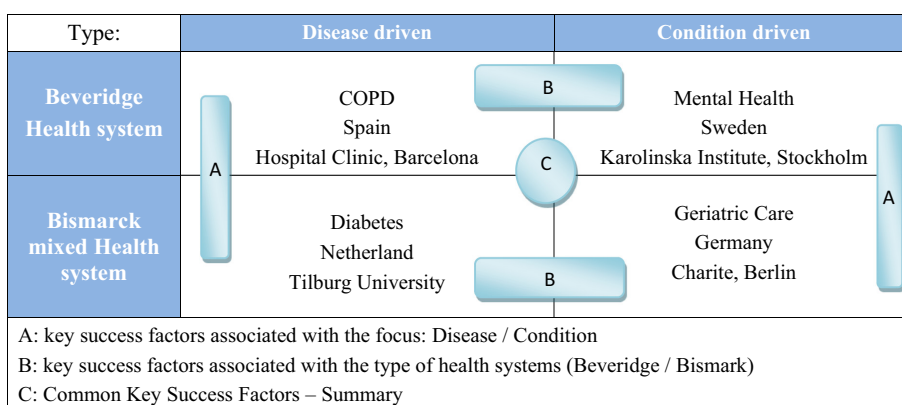
Type:	Disease driven		Condition driven	
Beveridge Health system		COPD Spain Hospital Clinic, Barcelona	B	Mental Health Sweden Karolinska Institute, Stockholm	A
Bismarck mixed Health system	A	Diabetes Netherland Tilburg University	C B	Geriatric Care Germany Charite, Berlin	A

A: key success factors associated with the focus: Disease / Condition
B: key success factors associated with the type of health systems (Beveridge / Bismark)
C: Common Key Success Factors – Summary

Figure 1. Classification of the Project INTEGRATE case studies and comparisons to be made.
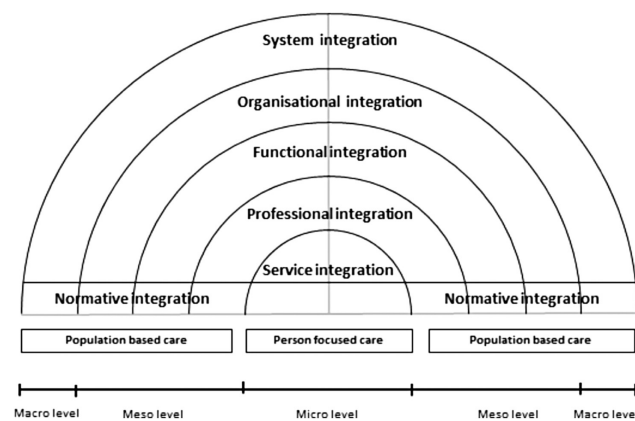(Source: Project INTEGRATE documentation)

Figure 2. The levels of integrated care-concepts for data analysis (adapted from Valentijn ([9]))

Based on the comparison of the four case study findings, Project INTEGRATE seeks to gain further knowledge of the different levels of integrated care/integration, through analysis of the corresponding horizontal cross-cutting themes (Figure 2).

- Personal integration/person-centred care (i.e. bio-psycho-social integration of needs of patients) - within Phase 2 'patient involvement' is examined;
- Service integration (i.e. provider care that is integrated into a coherent process) - within Phase 2 'Care process design' is examined;
- Professional integration (i.e. multi-professional teams/networks with the right skill-mix) - within Phase 2 'Human resources/ workforce management and development' is examined;
- Functional integration (i.e. non-clinical support and back office functions to support integrated care) - within Phase 2 information communication technology management is evaluated;
- Organisational integration (i.e. how and where organisations/providers are brought together) - within Phase 2 financial flows and payment systems is analysed; and
- System integration (i.e. coherence of health policies from different levels) - lastly within Phase 3 Project INTEGRATE forms policy and operational recommendations.

The intention is to operationalise this process by identifying relevant items for integrated care at each of the different levels and sources and to examine the interplay between different levels over time and in the different contexts.

This paper describes the common approach (methodology, accompanying instruments and template report) used by Project INTEGRATE case studies, to ensure coherent and consistent data collection, in order to obtain high quality results that can then be compared and contrasted with international evidence and fed into operational and policy recommendations.

Methodology and methods of analysis

Integrated care is multifaceted and thus its analysis requires insight and understanding from multiple perspectives. The use of case study methodology in combination with a mixed-methods approach is one way to first generate these essential multiple perspectives, second it allows for triangulation of the perspectives - whilst overcoming some of the specificity derived from diverse case studies - so that they may be mutually corroborated and led to appropriate use and transfer to other settings. The successful use of this approach in Project INTEGRATE also aims to encourage and facilitate further (necessary) cross-context comparisons in complex health system research (such as in integrated care research) to gain new in-depth understandings of the organisation and delivery of health care.

Case study (report) development

Project INTEGRATE has established the following minimum required information to be collected, undertaken by a common approach to facilitate the collection of similar (and thus comparable) data from each case study. A detailed case study report template has also been developed (Annex 1: Detailed case study report template).

- Working definition of integrated care: The specific case study context, the related objectives of the programmes or target group;
- Description of the implementation of the integrated care case: This includes a detailed understanding of: (i) the reasons and influences behind the choice of integrated care; (ii) why and how this particular approach was developed and implemented (implementation strategies); and (iii) how care services, professional roles, organisational arrangements and support systems are redesigned. This includes a time diagram to indicate the previous, current and desired status, where key elements and differences are shown to allow broad level comparison;
- Context influences which helped and hinder implementation;
- Describe the care intervention, organisation and management of integrated care.
- Assess the impact on professionals, and other key stakeholders, patient and professional experiences and care outcomes, and cost-effectiveness. Assess the impact in terms of value added and costs incurred, and listing of other possible causes of these impacts, other than the integration changes.
- Identify key barriers and key facilitators to the effective development of integrated care, and how these were overcome or were respectively encouraged.

Mixed-methods approach: data collection tools for case studies

As part of the common methodology framework and mixed-methods approach, project partners prospectively agreed that it would be beneficial to create a common strategy for the following methods.

Literature review strategy

The four case study reports are accompanied by a literature review to gain an overall in-depth analysis of the case studies and build on the existing body of knowledge in the respective fields of each case condition, taking into account existing valuable approaches [10]. The literature review approach uses an operational version of the definition of integrated care and is intended to be adapted by each case study site as appropriate (Annex 2: for details of the Common Literature Review Strategy).

Project partners acknowledge that there are some limitations to the common search strategy; the decision to link the definition of integrated care to the Chronic Care Model [11] might limit the researchers to certain aspects of integrated care that are not described by the model (although the model was chosen based on its international scientific acceptance and relevance). The limitation to two core components of the Chronic Care Model [11] has also been discussed: on one side, it might limit the scope of study, while on the other it helps focus the analysis. It has been concluded that the search is likely to still identify programmes with the other elements of the Chronic Care Model (of the health system and community components) [11], even if they are not explicitly stated in the search strategy.

Retrospective (chronic care) process and data analysis

Project INTEGRATE aims to acquire illustrative information about the pre/post integrated care intervention; this includes any available process and outcome data and administrative data (such as cost), through the utilisation of clinical databases and information system (Annex 1: for additional guidance on this).

Semi-structured interviews with stakeholders

Semi-structured interviews aim to gain insights into each stakeholders' understanding of and role in integrated care across past, current and future settings. Interviews had as main topics the access to individual care services; the situation before implementing integrated care, details about the implementation, any relevant context, the care co-ordination, patient involvement, the information communication technology in place, the financial flows, and the facilitators and barriers to successful and suitable integrated care. Interviews are foreseen with patients, health care professionals managerial and other staff who were involved in the co-ordination and delivery of integrated care services. For instance in the COPD/Spain case study, 10 interviews are foreseen with: two patients, one case manager nurse/head of integrate care unit, two integrated care unit nurses, one integrated care unit physician, one respiratory medicine specialist, one primary care nurse, one primary care case manager and one primary care physician. This will not be the same/relevant for the other case studies. Common interview question templates, interviewee information sheets and consent forms have been created to support the interview process.

Conclusion

In Project INTEGRATE a 'common' mixed-methods approach is being used – a conceptual framework, common methodology framework and common case study report template – by the four different case studies as a way of overcoming the usual challenge of context specificity and limited transferability of findings to other settings. Case study methodology combined with a mixed-methods approach can be extremely useful and relevant for complex health services research (i.e. research on integrated care), as it starts to provide an in-depth and broad understanding of the organization and delivery of care and helps to untangle some of the web of multifaceted complexity associated with integrated health care programmes. This is urgently needed, since these types of programmes are currently being widely implemented at different levels of 'maturation' (and understanding) in different health services worldwide [12]. Thus the approach described in this paper can be used as a way to ultimately derive key lessons and markers for successful application of integrated care programmes (including insight into barriers and facilitators), for different delivery contexts, in different types of health systems and for different patient-groups.

Reviewers

Two anonymous reviewers

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Annex 1. Detailed case study report template

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Project INTEGRATE case study report template

Introduction *(Include the following)*:

○ *Name of case study*

○ *Location*

○ *Condition*

○ *Aims and objectives:* Describe key aims of integrated care in the case sites themselves (rather than the aim of the research), e.g. to improve care experiences; to reduce admissions; to promote independence; to increase cost-effectiveness, etc.

○ *Description:* Describe key approach/approaches (for example: supported self-care; care pathways; teams, etc.)

○ *Impact*

○ *Lessons*

Main Case study report

○ *Overview of care intervention/integrated care (Include the following):*
  - Describe the situation in the country and/or health care facility prior to implementation of integrated care (e.g. in *The Netherlands they would describe how health care was organised before the bundled payment system was implemented*). Also, general characteristics of the country/region/health care system can be described here, if they are of importance for the case study.
  - Prove details of traditional model vs. new integrated care model.
  - Summarise the content of arrangements for co-ordinating care, covering target care group, core team members, internal and external co-ordination and referral relationships, and any systems and supports specially created to enable better co-ordination.
  - List how arrangements in this model differ from arrangements in many other places in the region.
  - Detail any improved outcomes expected from the model (specific objectives).

○ *Development and implementation of care/ integrated care (Include the following and refer to Annex II of this template for additional detailed guidance):*
  - Describe how the integrated care programme has been developed, that is, which steps have been taken from the initial planning of the programme until now. We suggest presenting a timeline for a historical overview of the development in this section.
  - Provide chronological description of how integration model was formulated/ developed in practice.
  - Include an event map: 'time line' showing when key changes were introduced

○ *Detailed description of care intervention/ integrated care (Include the following)*:
  - Provide detailed description of the integrated care program that has been implemented, (i.e. what components it consists of, how it works, what mechanisms are in place, who is involved, etc.) Include: Current co-ordination arrangements their development/change over time from programme inception. (e.g. how a vertically integrated primary-secondary care model evolved into a wider model involving social care, the third sector and housing, etc.) Existence of an implementation plan; assessment and care planning process; the care process [Include care process map]; care services and packages; care co-ordination, and organisation / management.

○ *Factors affecting implementation of care intervention/ integrated care (Include the following and refer to Annex II of this template for additional detailed guidance):*
  - Describe barriers, facilitators and key events that have been encountered during the implementation of the integrated care programme. This section should also focus on how case sites attempted to overcome the challenges they faced (i.e. Here the Netherlands would describe the initial political resistance or the GPs' reluctance to adopt a new approach to health care delivery.
  - Describe contextual influences on implementation of model- why? Barriers? Facilitators?
  - What were the original incentives/ motive to establish the model and who led the changes?
  - What were the most important influences which indirectly helped to establish the model and the most important influences which indirectly hindered establishing and operating the model (at different times)?

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○ ***Impact of care intervention/ integrated care*** *(Include the following and refer to Annex II of this template for additional detailed guidance):*
  - By 'impact' we mean everything that can be reported in terms of 'results' of the integrated care programme, ranging from patient and provider satisfaction to (clinical) process and outcome indicators. The availability and relevance of different impact measures might differ considerably from one case site to another.
  - What are the changes to processes of care which the model has introduced that are different from other services? Any information on personnel satisfaction/dissatisfaction with this model? Which can plausibly be attributed in part or whole to the model and are different from before and from comparable services: 1) patient satisfaction; 2) clinical and functional outcomes; cost per case.

○ ***Phase 2 cross-cutting themes*** *(Include the following):*
  - Provide most important details available at the time on each of the following issues: Care process management; human resources management; financial flows; patient involvement; information communication technology.

○ ***Lessons learnt*** *(Include the following):*
  - Practical lessons for the successful implementation of care co-ordination: Including how sustained and adjusted to changing conditions and why these have not spread in country and recommendations for spread.
  - Policy lessons: How can policy makers help to support/develop a platform to enable integrated care to flourish?

Conclusion

Annex 1: Common methodology applied to case study

Provide an overview of the methodology used in your case and how it was adapted from the original common framework.

Annex 2: Detailed description of case study report
Add detailed descriptions within each section of the case study report, based on chronological order of the case study, stakeholders, emerging patterns etc. Use the following information as guidance to assist with the development of case study.
  In addition, in order to support this section it might be worth considering that the implementation of integrated care can be compared to the development of a new business process, which after a while gets modified, optimised and continually innovated. Therefore the same phases of the lifecycle of a product or service can be applied ([13]). Four phases can be identified: Per phase, documents are to be gathered and analysed to describe the development phases of integrated care**:**

- ***Problem statement***, (analysis of the current process, identifying needs and requirements) of existing situation, needs assessment, stakeholder analysis;
- ***Initial (business) plan*** (detailing the design of the process) including references to white papers, conceptual models, examples of integrated care, policy documents, time path, budget, deliverables, evaluation plan;
- ***Working plan*** (Implement: Project preparation, blueprinting, realisation, final preparation, go live and support) guidelines and protocols, leaflets for patients and partners, training materials;
- ***Progress reports*** (Executive/Monitor: Executing or deploying the business process, monitoring the business process), website, evaluation reports, papers in national or international journals, presentations at symposia, surveys and/or questionnaires used for monitoring and evaluation.

For each section of the case study report, consider the following information as guidance to assist development:

○ ***Existence of an Implementation Plan***: How well developed was it? Were there capacity developments activities to have leadership and management to support readiness for change? What is the theory of change- i.e. the development model for integrated care? Was this planned or emergent?

○ ***Assessment and care planning process:*** How are clients referred into the programme; eligibility criteria (need/income); Case finding: risk-stratification/screening system in place? Are the criteria implemented before or after referral, or both? Disease-based or holistic? What is the average duration of client time in the programme? Is the care co-ordination intervention time-limited or on-going?

○ ***Care process-Process Map***: Interactive process map: how is care provided, co-ordinated to client, availability of care and services? How client needs matched to the various components of the intervention; nature of the assessment process; criteria used, done according to need? Process Map: intervention component and decision points: client flow, pathways, etc. Responsibility in co-ordination and continuity of care placed at first point of contact?

○ ***Care services and packages***: Include: Care services delivered by the programme/ initiative; different components of the care package; comprehensiveness; organisations delivering; components delivered/provided directly vs. indirectly- i.e. referred to other agencies through negotiated agreement; referrals to other agencies and not part of any formal agreement?; Owner of the process-control of making decisions about the care package?

○ ***Care Coordination:*** Care co-ordination with the client (relationship continuity)-patient engagement and involvement. How personal continuity of care (e.g. a named care coordinator) is achieved. Relational elements important in supporting care to

the client and their family. Overall responsibility for the co-ordination of care and treatment to the client? Management of care transitions between providers? Overall accountability for the client's care? Continuity of care, accountabilities of different providers and professionals to its partners in the team/programme.

○ ***Organisation/Management:*** Present and describe the organisational and funding arrangements of the integrated care programme. It is important to focus on how the development over time changes, favouring / hindering the initiative.

  ● *Leadership and management*: Who leads the programme? What systems of governance are in place? E.g. shared accountabilities? How is the programme administered? What is the management structure of the programme?
  ● *Care team:* Integrants of the team, being part of a multi-disciplinary network. Care team has the overall accountability for coordinating the client's care; explicit accountability: individual/team; change of accountability change at 'hand-offs'.
  ● *Organisational partners are involved and how do they relate to each other?:* Organisational chart / structure of programme delivery; rules of governance are in place, existence of performance standards; work relationship between different organisations involved in delivering care.
  ● *How the programme is funded*: Type of funding for a) developing the model and start-up, b) revenue funding once established and difference from previous arrangements (e.g. core resources? grant). To what extent is funding from health, social care and other funding agencies coordinated? What is the timescale of funding: yearly cycles or longer-term investment;-provide a diagram for how care is funded|: financial flows. What is different from the funding now and beforehand? How was it modified? Main challenges?
  ● *Estimate of resources for running the service compared to previous model (with range estimates of comparative costs if possible)*: Brief comparison of the cost of number and types of staff in new model compared to previous arrangements and the cost to establish the model including extra personnel time devoted to this.
  ● *Coordination-building actions*: Steps and methods used by key leaders/actors to plan and establish the co-ordination arrangements (i.e. how the arrangements were achieved – link back to context influences).
  ● *Organisational culture*: Key aspects of the organisational culture and team climate operating in the programme. I.e., how the programme is driven (by concerns over quality of care? by costs?); vision: is this shared/how achieved or encouraged; patient-centeredness; impact on staff turnover/staff development; to what extent do care professionals operate as a team? Fit with the care processes. Integration between managers/professionals.
  ● *HR/skill-mix issues:* Care professionals involved (nature, type, skill-mix etc.); roles in the programme: individual, team-based, co-ordination with providers / family/ patients. Nature of multi-disciplinary or inter-disciplinary teams. – Who is in the team-third sector? Family/ client? How many FTE's are needed and what is the case load of the team/ professionals? What is the ratio between time spent on care provision and administrative duties? How where activities, tasks and responsibilities divided between team members? How was this monitored? Where activities and/or tasks transferred between professionals? Did integration enhance or destroy competences of professionals and patients? Did integration introduce new competencies?
  ● *Functional Integration / Communication:* Back office functions that help to ensure care is well co-ordinated between both the different organisations and professionals involved (communication) and in terms of care co-ordination around patient's needs (shared records and shared decisions making). Communication Systems: care co-ordination between different care providers; capability for information exchange, type of information shared (progress notes, medication histories, visit summaries); encouragement of multi-disciplinary team.
  ● *Tools: training/skills development:* Scheme, performance indicators, incentive schemes or outcome targets.

○ ***Context of Integrated care***

  ● Contextual influences on implementation- why? Barriers? Facilitators?
  ● What was the original incentive and motive to establish the model/ who led the changes.
  ● What were the five most important influences which indirectly helped to establish the model and the five most important influences which indirectly hindered establishing and operating the model (at different times)?
  ● Describe how the payment arrangements help or hinder the model: those aspects of how these people and organisations are paid for caring for the people covered by this model which result in them loosing or making money with the model in operation: how hospitals, specialist physicians, primary care generalist physicians are paid; how other services often needed by the patient/clients are paid?
  ● Describe information sharing/data storage rules which help or hinder.

○ *Please also consider the following context areas:*
  ● *Policy context:* policies, standards or guidance that apply policy change? Differences to normal/current policies; macro-political environment – supporting vs. conflicting policies.
  ● *Regulatory context:* laws, best practice guidance, outcomes frameworks, targets, governance frameworks, legal rules – e.g. ability to share patient records, data privacy.
  ● *Financial context:* Main health financing system, financial flows and incentives, availability of direct resources for management; flexibility in use of budgets, financial incentives and penalties, investments and grants, macro-economic context: impact of the crisis (budget cuts, etc.)

- *Historical context:* Issues that are relevant to the case study from a historical perspective, such as working together/ relationships; professional engagement; history of innovation; legacy of infrastructure that supports integrated care-e. g. information communication technology systems.
- *Cultural context:* Leadership (initiator/driver; supportive organisational context; ability to challenge established practice; openness and trust; shared vision and values; positive self-image; normative cultures; political and organisational narratives and expectations, solidarity based, voluntary workers, etc.
- *Organisational context:* Previous service set-up: synergies to new ways of working; supporting role of health authorities/ commissioning agencies; strength/focus of primary care and/or provider dominated and led; gate-keeping functions; availability of care and services – e.g. essential pharmaceuticals etc. Availability of capacitated, motivated workforce, climate, adequate numbers, and distribution.
- *Research and development:* Collaboration with research institutions/ universities. Monitoring and Evaluation tools to be used. Is evaluation part of development and assessment strategy? – Availability of results. Studies on the cases. General focus on health services and organisations? Focus on integrated care. How pro-active is the site in using research/ audit as a way of reflecting on the quality of care and responding to this? Are there attributes of a 'learning organisation', key in higher performing health?

○ **Context for the choice and implementation of the integrated care model**
The implementation model context at national / regional level has an influence on the ability to deliver integrated care ordination effectively over time. Project INTEGRATE wants to identify how each one of the contexts selected changed (or not over the period covered by the case study). In the Annex provide details on 'receptive' or 'non-receptive' context for the delivery of integrated care and impact on strategies/approaches to care and subsequent outcomes. Also provides: trends of contextual factors over time about what factors, at what dates, either supported or hindered the programs establish its care co-ordination arrangements.

○ **Impact of Integrated care intervention**
- **Impact:** What are the changes to processes of care which the model has introduced which are different from other services? Any information on personnel satisfaction/ dissatisfaction with this?
- **Outcomes**: Which can plausibly be attributed in part or whole to the model and are different from before or from comparable services: 1) Patient satisfaction; 2) Clinical and functional outcomes; cost per case.
- Health outcome, patient/client experiences; care outcomes; costs, professional satisfaction.
- Advantages and limitations of the integrated care programme in meeting needs: the benefits provided by the arrangements compared to earlier stages, and the current limitations in providing optimal co-ordination and continuity for the patients served (as perceived by informants and observed by researchers).
- What are the intended goals and outcomes of the programme? What specific measures of performance were set or have been used to assess impact?
- Have any formal/ informal summative evaluations been conducted on this programme?
- What are the costs of the programme? What do these costs include?
- What process and outcome (performance) measures are collected as part of the programme (outcomes, patient/ user outcomes, experience/satisfaction professional views)?
- What evidence is there for impact in terms of: patient experience, patient/user outcomes?
- (Clinical effectiveness), utilisation and costs, and cost-effectiveness? – Routine use of patient/family surveys used routinely?
- What are the limitations to the evidence?
- What was the impact of the programme over time – when did benefits really start to accrue?

Source: Project INTEGRATE case study report documentation.

Annex 2. Common literature review strategy

Within the common literature review(s) strategy the following guiding questions are used:

- Which forms of integrated care for [COPD/diabetes/mental health/geriatric care] have been identified in the literature?
- What are the interventions/implementation strategies that are described in integrated care programmes for [COPD/diabetes/mental health/geriatric care] respectively?
- What are the barriers and facilitators to integrated care that are described in integrated care programmes for [COPD/diabetes/mental health/geriatric care] respectively?
- What are the outcomes of the interventions/implementation strategies that are described in integrated care programmes for [COPD/diabetes/mental health/geriatric care] respectively?

We adopted a systematic approach to identify the references to be included, where appropriate, and the search was not limited by language. The following sources were considered: peer-reviewed published articles, studies, publications, etc. and reference reviews elaborated by scientific leaders in the field (e.g. The Kings Fund (UK), The Nuffield Trust (UK), Nivel (NL).

The common search strategy includes three main sets of terms:

○ *Health condition:* Depending on the case study condition.

○ *Components of the Chronic Care Model* ([11,14]): including at least two core components:

- *Self-management*: self-management, self-care, self-management, self-management support, patient-centeredness, patient-centred care, patient involvement, patient education, information provision, behavioural support, behaviour modification, health literacy, cultural sensibility, stress management, motivational support.
- *Delivery systems design*: delivery system design, care pathway, critical pathway, individualised care plan, access to care, care co-ordination, clinical case management services, medicines management, case finding, co-morbidities management, regular follow-up, planned interactions, patient care planning, practice team, patient care team, team roles, team change, professional roles, practice nurse counselling, team-based care provision.
- *Decision support*: decision support, evidence-based guidelines, guideline adherence, standards, patient preference, clinician reminders, patient reminders, reminder systems, provider education, feedback, speciality expertise integration, referral, barriers to care, performance review, individualised care plans, patient participation.
- *Clinical information systems*: clinical information system, clinical registry, registries, population information database, patient data, population data, information sharing, shared information system, health information systems, health information technology electronic registry, clinical reminder, patient reminder, clinician reminder, provider feedback, performance monitoring, monitoring system, information communication technology devices, patient portal, telemonitoring, telehealth, teleassistance, telehomecare, videoconferencing, mobile phone, patient-held record.

○ *Type of intervention*: Integrated care is frequently used as an umbrella term; therefore within the search strategy the following terms will be considered: Integrated Care, Care co-ordination, Disease management, Disease state management, Comprehensive healthcare, Complex interventions, Multifactorial lifestyle interventions, Shared Care, Chronic Care Model, Care transition, Transitional care, Intermediate care, Case management.