INTEGRATED CARE SOLUTIONS 2025

Across the Great Divide

International case studies of integrated models of chronic disease care at the primary-secondary care interface

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The Health Foundation (THF) commissioned the International Foundation for Integrated Care (IFIC) to conduct research on international case studies of integrated models of chronic disease care at the primary-secondary care interface in non-UK Organisation for Economic Co-operation and Development (OECD) countries that deliver improved health care quality and efficiency and offer potentially valuable learning for improving services in the UK. The project started in September 2023 and has run until 31 May 2024. This document is the final report submitted in May 2024.

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IFIC is a not-for-profit research and educational network that crosses organisational and professional boundaries to bring people together to advance the science, knowledge and adoption of integrated care policy and practice. The Foundation seeks to achieve this through the development and exchange of ideas among academics, researchers, managers, clinicians, policy makers and users and carers of services throughout the world.

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Acknowledgements

With thanks to the Health Foundation team for their advice, oversight and multiple inputs throughout the different stages of the research: Liz Cairncross; Bryan Jones; Chuma Gondwe; Deiniol Jones; Luke McGeoch; Lukasz Zielinski.

We would like to express our deepest gratitude to all the informants of the different case studies:

- **ProPCC**: Miquel Angel Mas; Ramon Miralles; Josep Oriol Estrada; Ana María Andres; and members of the German Trias Hospital, the Metropolitan Nord Chronic Management team and the Sant Roc/Gorg primary care ProPCC unit.
- **CAREDOC**: Margaret Curran; Liz Malone; Mary Burke; Aideen Byrne; Norma Caples.; Tom Foley; Anna Marie Lanigan
- **Leuven**: Gijs van Pottelbergh; Marie Van de Putte; Renilde Alaerts; Karen Van den Bosch; Chantal Mathieu.
- **Alberta**: Richard Lewanczuck.
- **Keeping Well:** Deborah Pallavicini; James Inglis; Debra Clark.

We are grateful to IFIC Senior Associates (Anne Hendry; Caroline Nicholson; Michelle Nelson; Jason Yap; Albert Alonso; PJ Harnett) and international experts (Tony Jackson; Nick Goodwin; Marc Bruijzeels; Maura Thompson; Clive Tan; Ng Yeuk Fan; Daniel Fung Shuen; Joan Carles Contel) for sharing their time and their knowledge to help us identify appropriate case studies worldwide.

Many thanks also to all the participants at the ICIC24 workshop in Belfast for their useful contributions and lively discussion on the case studies.

Acronyms

A&E	Accident and Emergency department
ARRT	Aged Care Rapid Response Team
CC	Care Coordinators
CIT	Community Intervention Team
CT	Care Trajectories
ED	Emergency Department
GP	General Practitioner
GPN	General Practice Nursing
HARP	Hospital Admission Risk Profile
H@H	Hospital at Home
HiTH	Hospital in The Home
HUGTiP	Hospital Universitari Germans Trias i Pujol
HSE	Health Services Executive Ireland
ICIC	International Conference on Integrated Care
ICS	Institut Català de la Salut
ICS	Integrated Care System
IFIC	International Foundation for Integrated Care
IJIC	International Journal of Integrated Care
INT	Integrated Neighbourhood Teams
LHD	Local Health District
PCN	Primary Care Network
PHN	Primary Health Network
PCMH	Primary Care Medical Home
ProPCC	Programa ProPCC MetroNord Institut Català de la Salut
ProPCC-AP	ProPPC team in Primary Care
ProPCC-AH	ProPPC team in the hospital
OECD	Organisation for Economic Co-operation and Development
RDD	Research Design Document
SNS	Sistema Nacional de Salud
THF	The Health Foundation
WHO	World Health Organization
ZZL	Zorgzaam Leuven (Leuven Cares)

1. The Research Project

1.1. Introduction

While the integrated care movement continues to expand the boundaries of integrated care, moving on to new conceptual spaces and policy frontiers, there is a widespread sense that the practice on the ground very often remains fragmented.

The four United Kingdom (UK) countries have undertaken profound organisational reforms over the last few years and set up integrated structural arrangements. All four countries have been on a journey towards integrated care for several years. This experience is shared by other countries and areas around the world. More recently countries have expanded the concept of integrated care beyond the health system to include social care and population health. Still, the divide between primary and secondary care in the UK, as in all health care systems around the world[1], persists. Several reports in the UK have highlighted the lack of effective working across the primary-secondary interface[2]. The Fuller Stocktake Report (2022), with its focus on primary care[3], and The Hewitt Review (2023) focusing on Integrated Care Systems[4], both highlighted some examples of collaboration between primary and secondary care in England. The common thread of these examples was the goal of secondary care avoidance, with most changes happening in primary or community care, rather than directly addressing the fragmentation between primary and secondary care. Where this issue was addressed, it was through recommendations such as sharing data and information, making changes to funding mechanisms and to multidisciplinary work practices.

The cultural and structural separation between primary care and secondary care continues to be real, deep and wide. There is a tangible divide between services and organisations. Despite two decades of work on integrated care, this gap between primary and secondary care has remained stubbornly impervious to change. This is reflected in the poor coordination across primary and secondary care experienced daily by patients with chronic and complex medical conditions.

The smooth movement from primary care to secondary care and from secondary care back to primary care would require multiple care providers and settings to coordinate: “coordinate is, together, to order the care which different providers give to a patient, so that the results are greater than the sum of each provider’s care. Clinical care coordination is where two or more providers – individuals or organisations – communicate or collaborate with each other and the patient to provide care that takes account of other’s actions”[5].

Together with continuity of care, coordination is one of the "central defining features" of integrated care. While these two features - continuity and coordination - are very often used interchangeably, they point to different (although closely linked) dimensions. Continuity is a temporal dimension - the delivery of integrated care across time, while coordination is a spatial dimension - the delivery of integrated care across multiple providers, settings and geographies. The IFIC Annual Survey 2023[6] received views across different stakeholder groups (service users, care providers and policymakers) on whether they believed that continuity and coordination of care is happening. While people generally saw small and moderate advances, effective continuity and coordination of care was not fully established yet, in particular with regards to coordination on care. People had more positive views about achievements with care continuity over time than with coordination of care across multiple providers and settings.

The focus of this research is care coordination, specifically. The purpose is to identify innovative international examples that have aimed to close the divide, or at least bridge it, between primary and secondary care and achieve better care coordination between both settings. The Health Foundation (THF) commissioned the International Foundation for Integrated Care (IFIC) to conduct research on international case studies of integrated models of chronic disease care at the primary-secondary care interface in non-UK Organisation for Economic Co-operation and Development (OECD) countries that deliver improved health care quality and efficiency and offer potentially valuable learning for improving services in the UK.

1.2. Scope

The scope of the commissioned work involved developing case studies of international examples of integrated models of chronic disease care at the primary – secondary interface, and to explore the micro, meso and macro-level enablers and barriers to the implementation and delivery of these care models, identifying lessons that may be translatable to the UK NHS context. The specific goals of the research have been:

- To understand "interface" as any form of interaction between the primary and secondary care sectors. However, our focus has been on how the two sectors work together, rather than on the transition of patients across boundaries between the two sectors, as other definitions point to[7]. Hence, we have explored the exercise of care coordination between levels of care- the shared care element[8] of the interface - rather than on the short-term management of acute escalations and transactional events. The primary-secondary care interface can be seen happening through various coordination mechanisms, including for example, the existence of pathways; coordinated joint planning of care; established interdisciplinary teamwork; specific care coordination roles; availability of shared care records; how technology supports coordination of care between professionals; etc.
- To develop case studies that have succeeded in building a coherent "system of care" as a result of the interface, instead of just isolated coordination mechanisms. Importantly, our focus has not been on excellent experiences which take place in isolation (e.g., between a few primary care doctors and a specialty unit in a particular hospital that have succeeded in putting together a pathway for a particular disease) as they may be too context-specific and/ or too dependent upon exceptional individuals and exceptional circumstances. Instead, we have been looking for experiences that emerge from a coherent "system of integrated care" in the organisation or group of providers, where coordination is "sufficiently" embedded, flows from an integrated care vision, and is reflected in a number of care processes in other conditions or across the whole organisation.
- Rather than mere pilots, we have been interested in models that have scaled or spread across organisations, local care systems, counties or the country.

- To avoid a high-level reporting on integrated care systems and instead see examples of different approaches to care delivery (model of care and service delivery arrangements), with the elements of the other health system functions (e.g., financing, governance, technology solutions, workforce arrangements, etc.) and contextual characteristics as facilitators or barriers to the deployment of the service arrangements.
- The models of care were to be anchored in their focus on a particular chronic disease or group of diseases.

1.3. Methodology

The research has taken a qualitative approach, informed by the review of peer-reviewed and grey literatures, as well as interviews with local informants and international experts.

It proceeded in 3 phases starting (i) with an initial comprehensive search to generate a long-list of potential case studies; (ii) the shortlisting and selection of cases followed by the data collection and development of the studies; (iii) and concluding with the validation with case study authors and international experts at a workshop at the International Conference on Integrated Care (ICIC24) in Belfast in 2024, the drawing out of lessons for UK practice and implementation and the writing up of this report. A strong coproduction approach between THF and IFIC has been maintained throughout the entire research process, with key moments including the development of the RDD, selection of countries, shortlisting of the 5 case studies and the organisation and delivery of the ICIC24 Workshop.

Phase 1

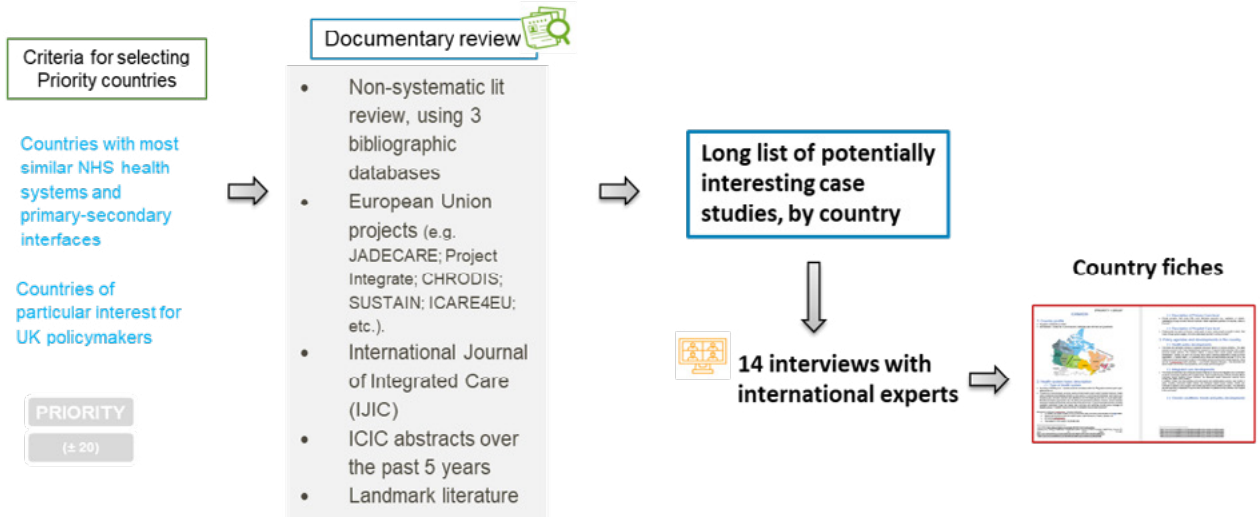
We conducted a comprehensive documentary review which included: (i) the review of publications in three bibliographic databases (PubMed; Bielefeld Academic Search Engine; the Library database of the London School of Hygiene and Tropical Medicine); (ii) key EU-funded projects with a focus on integrated care and chronic care (e.g. JADECARE; Project Integrate; CHRODIS; SUSTAIN; ICARE4EU; etc.); (iii) IFIC's International Journal of Integrated Care (IJIC), drawing on the recent curated internal analysis of publications published in IJIC; (iv) conference papers submitted to IFIC's International Conferences held over the past 5 years; (v) key publications reviewed manually on integrated care[9].

In addition to this general search, specific searches were conducted for a selection of countries of the total 38 OECD countries. The primary criteria for selection combined countries with similar health system to the UK NHS, with a strong primary care system acting as first point of contact and a gatekeeper function. However, a few countries with health systems that are dissimilar have also been included because there was preliminary evidence of the existence of countries with interesting integrated care developments, comprehensive primary care reforms or innovations specifically on the primary-secondary interface. The THF and IFIC teams discussed and selected 20 countries in which to prioritise the search, divided in two groups (Priority 1 and Priority 2 countries) of around 10 countries each (although without necessarily excluding other countries if eventually a potentially interesting case study was to be identified)[10]. Then, specific literature searches using the Google search engine and the PubMed database were conducted for the selected countries.

This resulted in a long list of 37 potential case studies, which were collected into country fiches. Each country fiche included a short description of the cases as well as the country health system and health policy developments, primary care and hospital arrangements, policies and reforms in the fields of primary care and integrated care, etc.

In addition, the information gathered through documentary reviews was confirmed through interviews with 14 key informants from various countries. These conversations have taken place through remote interviews as well as face-to-face at the Asia-Pacific Conference on Integrated Care that took place in Sydney on 13-15 November 2023.

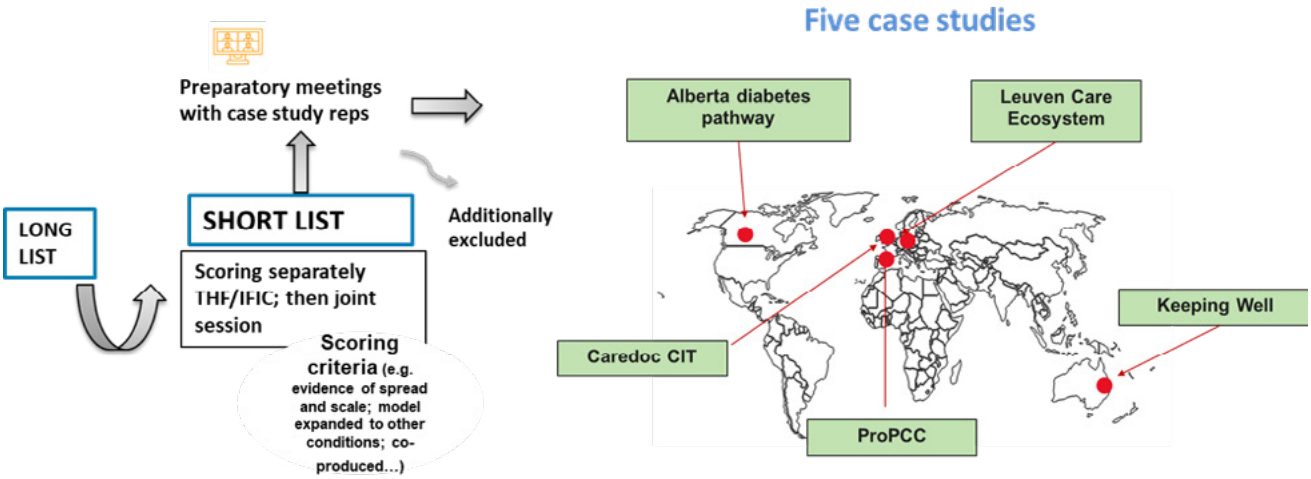
Figure 1. Tasks undertaken in Phase 1 of the research process



Phase 2

The long list of case studies was reviewed with the THF and IFIC teams separately first, with cases scored according to a set criteria. Scores were later discussed jointly by both teams, as a result of which there was agreement to proceed with the investigation of eight case studies. Preparatory meetings were then conducted with informants from all these cases, confirming the validity of the retrieved information of five examples and discarding three not-fully relevant cases for this project.

Figure 2. Tasks undertaken in Phase 2 of the research process



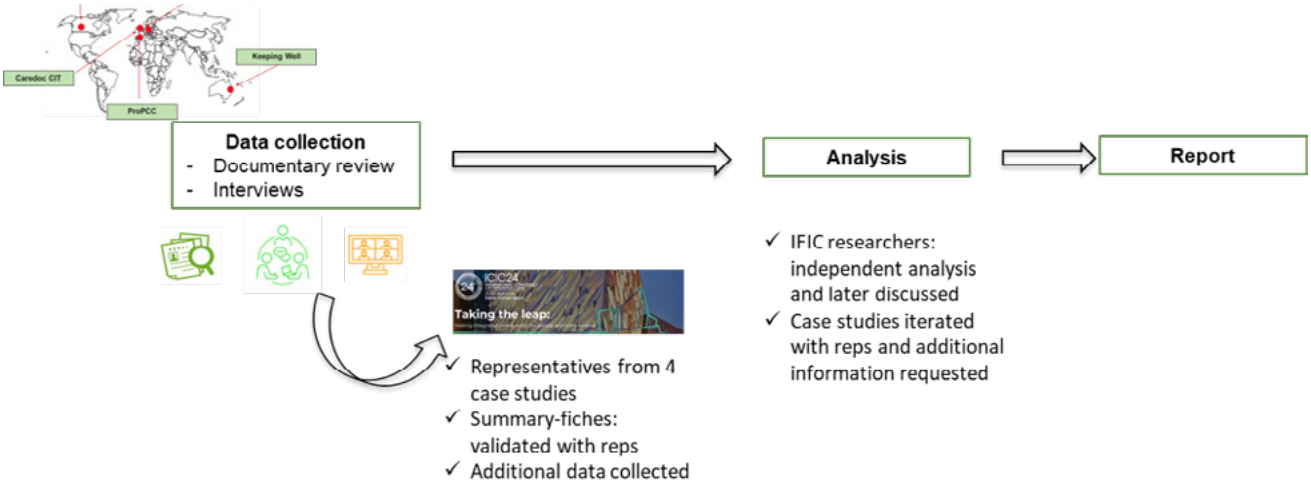
Phase 3

Data collection on the final five case studies was completed by reviewing additional documentary evidence and by conducting semi-structured interviews with programme leaders and stakeholders. The IFIC team visited 2 case studies (ProPCC and CAREDOC) while the interviews for the other three case studies were conducted remotely.

Case studies were presented at a 90-minute workshop held at the International Conference on Integrated Care ICIC24 in Belfast on 23rd April 2024, bringing together authors from the case studies and international experts. Summary-fiches of each case study were prepared, validated with case-study representatives and used to facilitate the workshop discussions. In addition, the drafts of case studies were also shared with case study authors for their feedback.

Finally, IFIC researchers analysed the data independently, first against the analytical framework presented in the next section, and their results were compared and jointly discussed.

Figure 3. Tasks undertaken in Phase 3 of the research process



1.4. Analytical framework

As mentioned in the Introduction, the focus of this research is care coordination specifically and looks at the interface between primary and secondary care as the space where coordination between care providers takes place (or should take place when it's absent). Coordination has a spatial meaning, implying the delivery of integrated care across multiple providers, settings and geographies. This section presents the analytical framework that has been used to explore how coordination between primary and secondary care takes place in the different case studies.

There is no single definition of care coordination – indeed, Schultz and McDonald have counted 57 different definitions in the specialised literature, among which their own definition is "the deliberate organisation of patient care activities between two or more participants (including the patient) involved in a patient's care to facilitate the appropriate delivery of health care services"[11]. Following Øvretveit, "clinical care coordination is where two or more providers – individuals or organisations – communicate or collaborate with each other and the patient to provide care that takes account of other's actions"[12]. Möckli and colleagues noted that very often the term is interchangeable with terms such as teamwork, collaboration, or integration[13]. In other cases, the definition is really a description of the range of strategies to achieve coordination.

For example, the National Coalition on Care Coordination defined it in a descriptive manner as "a person-centred, assessment-based, interdisciplinary approach to integrating health care and social support services in a cost-effective manner in which an individual's needs and preferences are assessed, a comprehensive care plan is developed, and services are managed and monitored by an evidence-based process which typically involves a designated lead care coordinator"[14]. For Goodwin and colleagues, "care coordination consists of a range of strategies that seek to create more integrated and person-centred care across various settings"[15].

The 2018 World Health Organization (WHO) practice brief on the continuity and coordination of care listed a range of strategies and interventions that facilitate both care continuity and care coordination[16]. In particular on the latter, the WHO practice brief organized the approaches and interventions along Øvretveit's three dimensions of clinical coordination – sequential coordination, parallel coordination and system enablers[17] (see Table 1 below). Sequential coordination refers to a planned handover of responsibility and transfer of care from one team to another; parallel coordination is more demanding interaction as it involves collaboration among the professionals who share responsibility for the care provided; and indirect influence is exercised by enabling coordination through tools, incentives or education.

Table 1. Range of approaches and interventions for optimizing care coordination

Dimensions	Approaches / Interventions
Sequential coordination	• Cross-sectoral care plans and discharge planning • Technology systems to promote information transfer and sharing of care among settings • Collocating multidisciplinary professionals • Shared, collaborative single points of entry to care • Primary and specialist care referral pathways and processes • Specialist outreach and case-finding
Parallel coordination	• Interdisciplinary teams • Care coordination roles (e.g. case and care managers, system navigators) • Formal assessment tools (e.g. goal setting, geriatric assessments) • Individualized and tailored care plans • Self-management support • Specialist support and training
System enablers for coordination	• Role clarification and agreements withing and between sectors (e.g. accountability agreements; care pathways and protocols) • Collaborative training and education of providers to improve skills and competences • Qualitive improvement tools to assess and improve coordination • Technology enablers for care coordination

Source: World Health Organization (2018)[18]

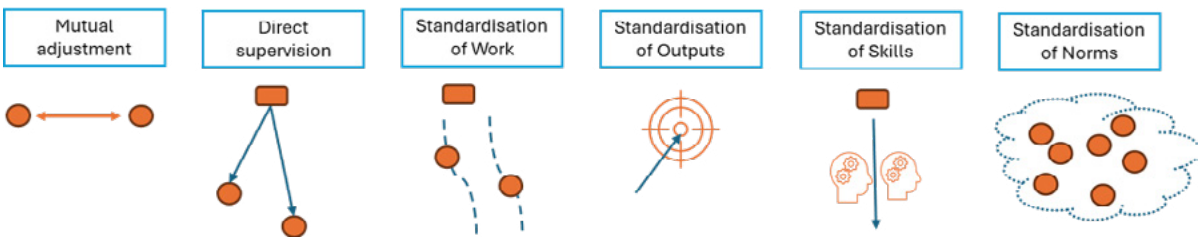
This list of approaches and interventions for care coordination is very comprehensive and useful to understand what can be done to promote coordination. It fundamentally responds to the question of what organisations can do to optimize care coordination. Thus, they can choose and implement a number of interventions from this list, and certainly each international cases studied in this report have deployed a suite of these from the list.

However, the purpose of this research has been to go beyond the identification and listing of strategies in the different case studies to understand how the international case studies manage to overcome the coordination challenge. The research question has been how these innovators managed to coordinate the work of primary and secondary care across the existing organisational divide?

Various theoretical frameworks have been used by the specialized literature aiming to respond to this question . However, to help us understand the deep mechanisms that organisations use to coordinate their activities across the divide, the work of Canadian scholars Henry Mintzberg and Sholom Glouberman from the management studies and organisational theory has been used. In a 1997 paper[20], they identified six basic mechanisms of coordination between health care organisations (of which 4 involve standardisation):

- **Mutual adjustment** happens when action is coordinated through informal communication. For the coordination of primary and secondary care, this would mean that individuals and teams on both levels of care relate informally to coordinate care, through telephone or other communication means, meeting informally, etc.
- **Direct supervision** refers to the existence of an individual or a group who set directives to the staff under their responsibility. In the context of primary-secondary care interface, this could entail the existence of a cross-departmental manager or a liaison committee, able to set directives, oversee the coordination between all parties, review data for planning and monitoring, etc.
- **Standardisation of work processes** and procedures occurs when the content of the work is specified from the start and staff on both sides comply with those operation procedures. Typical means to achieve this includes the development of protocols and pathways, the use of case conferences as spaces for structured decision-making and of electronic health records to systematically collect patient's data, the exercise of shared care planning, etc.
- **Standardisation of outputs/outcomes** exists when the results of the work are clearly set up and staff deliver against those set targets. Here, this implies clarity on the purpose and goals of the programme as well as health and care outcomes set up at individual level.
- **Standardisation of skills** implies that people are trained to know what to expect from each colleague. In the context of primary-secondary care interface, while clinical skills are acquired thorough the formative phases of basic clinical training, it can also entail ongoing training, interdisciplinary workshops, the selection of profiles for the care teams, etc.
- **Standardisation of norms** understood as the developing of common values and beliefs as a result of the continuous interaction. Structures can help care practitioners from both sides of the interface socialize in common values and beliefs, acquiring a common language and sharing approaches and views.

Figure 4. Visual representation of the six mechanisms of coordination



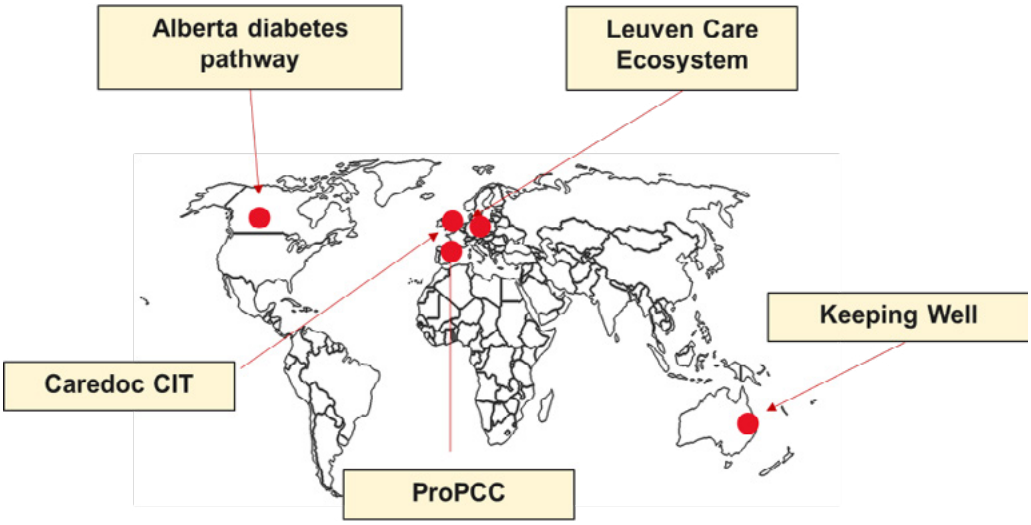
Source: World Health Organization (2018)[18]

Mintzberg and Glouberman's framework has been applied by authors to understand how they managed to overcome the coordination divide[22,23]. For example, in the light of the framework, Terraza et al.[24] review different mechanisms of coordination in a health care organisation, reflecting in particular for the coordination of care to manage chronic conditions.

2. The Case Studies

The systematic identification and selection process described in Section 1.3 resulted in the designation of the following 5 international case studies:

Figure 5. Selected care studies



- **ProPCC:** The North-Metropolitan Barcelona Community-based Integrated Care Programme to People with Complex Chronic Conditions (ProPCC) targets people with complex chronic conditions and high health and social care needs ("High needs, high costs" patients) to provide services at home and nursing homes. ProPCC teams are formed in both primary care and the hospital, interacting in multidisciplinary case conferences.
- **CAREDOC Community Intervention Teams (CIT):** an acute care service in the community. Community Intervention Teams (CIT) of specialized nurses (and OT and physiotherapists) work through hospitals, referring patients for early discharge where applicable and with general practitioners referring patients directly to avoid hospital admission.
- **Leuven Care Ecosystem:** over the years, the city of Leuven in Flanders (Belgium) has created a care ecosystem for the management of chronic conditions which is based on transmural management programmes (Care Trajectories, CT) upon which builds a horizontal programme (Zorgzaam Leuven, ZZL). The focus of our study will be the diabetes management programme. The diabetes CT is an integrated care programme between GPs and endocrinologists. ZZL is a collaborative programme with horizontal leadership that promotes the emergence of networks (Integrated Neighbourhood Teams, Caring Communities) and a data-driven population health management programme for the entire region, which identifies local needs and provides risk stratification.
- **Alberta Diabetes pathway:** A system-wide chronic care model of screening and treatment for diabetes developed by a Regional Diabetes Programme enhanced by the facilitating structures of a Primary Care Network (PCN). Key elements of the diabetes programme include standardised clinical protocol; single point of entry; centralised triage system by a triaging physician; GP referrals to specialists through central booking system; educational modules for patients.
- **Keeping Well:** a programme to identify patients that are at risk of presenting to an emergency department resulting in unplanned admissions and provide them with ongoing care and management led by their GP and by specifically tailored services to assist with the patient's need.

2.1. ProPCC MetroNord ICS Barcelona

2.1.1. Context

The territory and the organisation

The North-Metropolitan Barcelona Community-based Integrated Care Programme to People with Complex Chronic Conditions (Programa ProPCC MetroNord Institut Català de la Salut) has been implemented in the metropolitan area north of Barcelona (Catalonia, Spain), and is populated by 1.9 million people, which includes large cities such as Badalona, Sant Adrià del Besòs or Santa Coloma de Gramenet. In that territory, health care services operate as an integrated care health care system of the Catalan Health Institute (Institut Català de la Salut, ICS) the largest public health services company in Catalonia[25] under the management of the Gerència Territorial Metropolitana Nord). The existence of this governance structure has proved instrumental in the development and strength of integrated care efforts across the territory. In the metropolitan area north of Barcelona, ICS manages 68 primary care teams and the Hospital Universitari Germans Trias i Pujol (HUGTiP) in Badalona, which is a tertiary reference centre. However, other multiple providers[26] which do not belong to the ICS deliver health care services in the territory.

As part of the Spanish national health system (Sistema Nacional de Salud, SNS), the Catalan health system is based on the principles of universality, free access, equity and fairness of financing, and is mainly funded by general taxation. The Catalan government is responsible for deciding and managing the health budget and planning and delivering services in Catalonia. "Primary care remains a core element of the health system, with primary health care teams forming the basis of the SNS. Primary care is essentially provided by public providers, specialised family doctors, and staff nurses, who provide preventive services to children, women, and elderly patients, as well as acute and chronic care. Primary care teams are the first contact point for the system, and they are the gatekeepers of the system".[27]

The Chronic Conditions and the Integrated Care programmes in Catalonia

ProPCC latches in Catalonia's journey towards integrated care that can be traced back decades. In 2011[28], the Chronic Disease Prevention and Management Programme (Programa de prevenció i atenció a la cronicitat de Catalunya 2011-2014)[29] was launched, with a focus on improving the care of patients with chronic conditions. Two profiles of complexity were defined: Complex Chronic Patient (the programme acronym in Catalan is PCC) which included people with multimorbidity, severe unique disease, advanced frailty; and Advanced Chronic Disease (programme acronym in Catalan is MACA) of people with limited life prognosis, palliative approach and requiring individualised advanced care planning.[30] In the Catalan approach to managing chronic conditions, it has always been emphasised that complex care requirements very often derive as both health and social needs concur.

Not surprisingly, integrated care has equally developed strong links to this chronic care programme, with the launch of the Inter-departmental Integrated Health and Social Care Plan (Pla interdepartamental d'atenció i interacció social i sanitària, PIAISS) in 2014. Collaborative experiences (local micro-systems) have been developing locally over the years and reflecting the momentum and push of the integrated care agenda, the International Conference of Integrated Care ICIC16 was hosted in Barcelona in 2016. In 2024, the integrated care agenda continues to be high in policy terms in Catalonia.[31]

The North-Metropolitan Barcelona Community-based Integrated Care Programme for People with Complex Chronic Conditions, ProPCC emanates from these two policy agendas as well as from the quality improvement work of the ICS Gerència Territorial Metropolitana Nord.[32]

2.1.2. The ProPCC programme

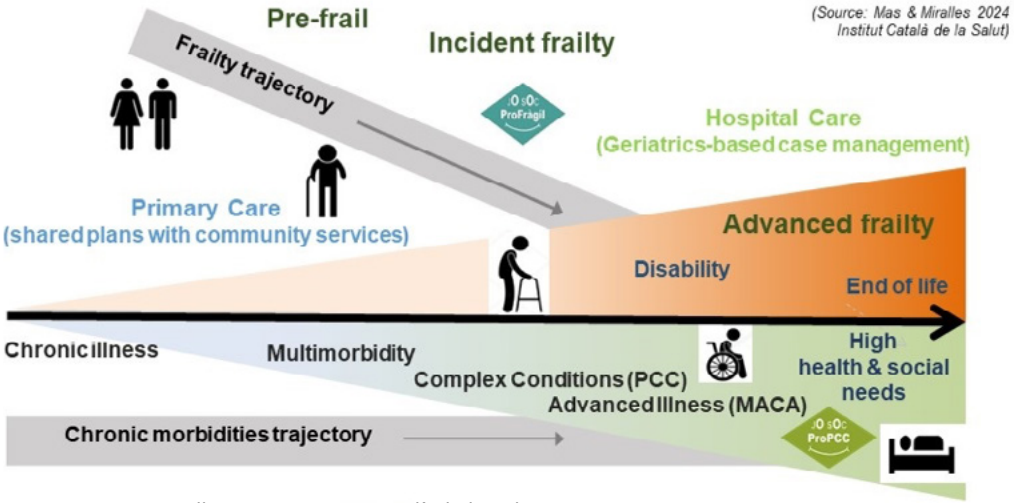
Programme objectives and problems being faced

Catalonia has one of the highest life expectancies at birth in Europe (83.5 years in 2021) and the MetroNord area has an increasing ageing population, with a high ageing index (people 65 and over) and a high ageing index for the older-old of people 85 years and over.

Based on the adjusted morbidity tools (GMA in Spanish)[33] there are approximately 40,000 people living with complex chronic conditions with high morbidity (levels 3 and 4 of GMA) and nearly 3,000 people with advanced conditions with high morbidity (levels 3 and 4 of GMA) in the MetroNord area. Badalona is one of the five most populated cities in Catalonia with 224,301 inhabitants, with a high population density (10,590.2 inhabitants per square kilometre) and high ageing index. Data from the Institute of Statistics of Catalonia (IDESCAT 2022) show higher poverty and lower education levels compared to the average statistic of Catalonia.[34]

The ProPCC Programme[35] targets people with complex chronic conditions and high health and social care needs, leading to high use of health care resources – that is, "high needs, high costs" patients[36], which is part of the local integrated care strategy to support people living with frailty, multimorbidity and advanced illness. A core element of the programme is the understanding of the impact of social determinants of health on the management of chronic conditions – as one of the programme coordinators said, "on many occasions, the patients decompensate due to social causes derived from the socioeconomic context".

Figure 6. Integrated chronic care programmes between Primary Care teams and Germans Trias i Pujol Hospital (HUGTiP)



Source: Mas & Miralles 2024, Institut Català de la Salut

Origins and evolution

ProPCC builds upon several resources and experiences that have been in place for years in the health organisations involved. Since 2012, Primary care-based case management in the community (single-discipline case management led by nurses) had been widely used over time, in particular in the areas of managing chronic patients and in palliative care, with the support of palliative care at home (Programa d'Atenció Domiciliària Equips de Suport, PADES) and hospital-at-home teams. Moreover, the HUGTiP had a small health and social care unit (Unitat Funcional Interdisciplinària Sociosanitària, UFISS) within the geriatrics department, composed of geriatricians, nurses, a social worker and an occupational therapist, but which had limited resources and capacity to coordinate with primary care and other care services. ProPCC incorporated that resources and built upon its achievements but transformed with a more proactive approach to care.

As mentioned before, the existence of governance structures facilitated the work between primary and secondary care, in particular the Gerència Territorial Metropolitana Nord and, as part of it, the Chronic Care Management Directorate (Direcció Clínica Territorial de Cronicitat)37, set up in 2018. Hence, under the leadership of this multidisciplinary team, the design of ProPCC started that year by engaging widely with providers and stakeholders, including patients and caregivers.38 A comprehensive methodology process included a literature review of good practices, the capturing of users and carers experience, and the professional engagement. To capture the experience of users and carers, they conducted 2 focus groups with PCC patients and carers and 16 interviews with service users and representatives from patient associations. Following all this work, a 100-strong taskforce was formed with people from health sector, social services, etc., to define valuable clinical actions which could potentially be implemented, collecting a pool of 63 actions.

The design of the implementation included a careful selection of "champions" – people from primary care teams and hospital services who would participate in the co-design and later take forward the programme. The implementation phase started in 10 primary care centres in Badalona which fall within the area of the HUGTiP, as this would limit potential organisational challenges; but more recently other primary care teams (from 6 centres in Santa Coloma de Gramenet) which refer patients to another hospital nearby (Fundació Hospital de l'Esperit Sant). Expanding the programme to this region brings additional benefits to the population of approximately 300,000 individuals who are being cared for by various providers, now under the same model of care in order to assist those with advanced and complex conditions.

2.1.3. Model of Care/Constituting elements of the practice

ProPCC provides services 12 hours per day and 5 days per week (with continuous care 24/7 support by other territorial services from Primary and hospital care) mainly at home and eventually at nursing homes. It's a multidisciplinary care model led by nurses, as the nurse case manager plays the pivotal role, with the support of physicians and social workers. ProPCC teams are formed in both the primary care setting (ProPCC-AP) and in the hospital setting (ProPCC-H) which interact through multidisciplinary case conferences.

The key elements

a) ProPCC teams in both settings

The key coordination units are the ProPCC teams, that are multidisciplinary teams who deliver care services at home and at nursing homes, and in the acute hospital. ProPCC teams are support teams, so they do not hold a patient list for themselves. In the primary care setting, the ProPCC-AP is formed by a case manager nurse, a GP and social worker, while the hospital team ProPCC-H is based at the geriatrics department and is formed by a geriatrician doctor, a nurse and a social worker. The dedicated time dedicated is considered regular work, not external time, and hence it is included in their clinical agenda. Staff members of these teams work full time in case management of high-need populations. All the teams include the participation of the three disciplines, but some teams lack of a full time GP due to the shortage of GPs in the local health system. The ProPCC Programme is the clinical tool used to standardise the implementation of the model. In 2024, a total of 16 ProPCC teams have been distributed in Badalona and Santa Coloma de Gramenet.

The ProPCC-H teams support people with acute episodes that cannot be treated in the community setting and are therefore referred to the hospital. The explicit goal is to avoid hospitalisation or decrease the hospital stay if possible, exploring suitable alternatives (e.g. through hospital at home services) or adequate hospital stay, working on early transitions to home considering health and social care perspective.

b) Case management in the community and during hospitalisation

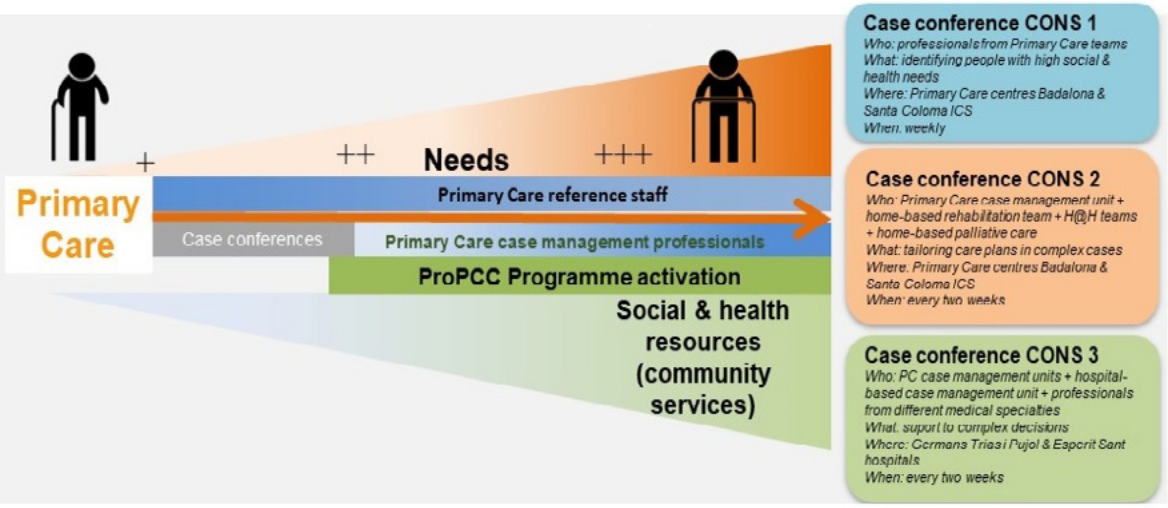
The key coordination mechanism is the case management model in place, which moved from a single-discipline case management to multidisciplinary case management. It is perceived as a collective exercise through the regular clinical meetings or case conferences, which are of three types: CONS1, CONS2 and CONS3.

Thus, CONS1 meeting takes place weekly between the ProPCC-AP and the primary care teams at the primary care centres of Badalona and Santa Coloma. The purpose of the CONS1 meetings is to identify patients with high social and health care needs to include in the ProPCC programme.

CONS2 is a bi-weekly meeting between ProPCC-AP and the various specialised care services in the community, such as the Hospital at Home service, the homebased rehabilitation team and the homebased palliative care team. The purpose of the CONS2 meeting is to discuss how to avoid inpatient stays at hospital, how to tailor care plans, what to do with specific cases if complexity evolves, etc. When reviewing these complex cases, the professionals review their wide complexity profile including functional status, cognitive status, social status (caregivers, home, social resources) and what matters most to the patient and family.

CONS3 meetings take place monthly at the UHGTP hospital, between the ProPCC-AP team, the ProPCC-AH and professionals from other hospital specialties. The purpose of these meetings is to provide support for complex decisions.

Figure 7. ProPCC multidisciplinary team case management model and care planning case conferences



Source: Mas & Miralles 2024, Institut Català de la Salut

c) Individual Care Plan

The Individual Care Plan (Pla d'Intervenció Individualitzat Compartit, PIIC) is an instrument developed for the entire Catalonia and it is now part of the shared clinical records (the HC3 system). The PIIC contains information on the person's social support, on the social resources received, etc.; an action plan; directories for health crises management at home, and information on the anticipatory desires of the patient (for the end-of-life). Retrieving some of this information requires active engagement with the patient and the family.

While a key clinical instrument, ProPCC is also a fundamental coordination mechanism and a dynamic instrument which is updated regularly. It is an essential tool for the work of the ProPCC teams and at the various case conferences. The PIIC is produced by primary care, either by the GP team or by the ProPCC-AP team. It cannot be modified by the hospital team, but rather they produce a report if they feel a modification is required, although the ability to change the PIC is to the ProPCC-AP team. The PIIC can also be accessed from the nursing homes.

The PIIC is also an instrument to forge a shared culture between all levels of care. Staff is trained on how to produce a PIC and to ensure the quality of this instrument. There are regular checks on the PIICs by the Primary Care Service Directorate (Direcció d'Atenció Primària Metropolitana Nord-Servei d'Atenció Primària Barcelonès Nord, SAP-BNM).

d) Circuit/Pathway

ProPCC operates under the principle of subsidiarity, by which the patient only enters the ProPCC programme if the usual primary care team considers that it is required and when there is an evolution of the care complexity, that the patient can no longer be cared for by the usual primary care team.

Similarly, a key principle of the programme is the proactivity and anticipation. To ensure such proactivity, both virtual and face-to-face visits are set (a monthly phone visit; a face-to-face meeting every three months; the visit of the social worker every three months; a face-to-face meeting every time there is a change in the situation and needs of the person).

The programme aspires to automatize processes through the different stages of care.
For example:

• At the community setting:
While the patient is at home, the person is under the management of the ProPCC-AP. In the case of an acute episode, the ProPCC-AP would respond. Other services that have interaction with ProPCC-AP are the Hospital at Home Unit, the Pneumology Day Hospital, Palliative care team, Hospital Social Work unit, etc. The ProPCC-AP can urge direct activation of the Hospital at Home resources: in fact almost 50% of these patients are derived from ProPCC-AP, without previous hospital ward admission.

• At the hospital:
If the episode cannot be resolved at the primary care setting and still requires a referral to hospital, then this is done through Day Hospital/outpatient services' activation (such as the Pneumology Day Hospital or the Heart Failure Outpatient unit at HUGTiP), or at A&E. The process is facilitated by a ProPCC diagnostic code that is given by the ProPCC-AP and that automatically activates the ProPCC-H, so the patient goes directly to them for hospital case management and is not left unidentified in A&E or other units.

A first multidimensional assessment is conducted by the ProPCC-H (including assessment of health and social needs). If possible, to avoid the hospital admission, the patient is sent home if care can be provided by Hospital at Home, home-based palliative care teams, the ProPCC-AP or other services. Social assessment is conducted at this first moment, and it is not left to when the discharge is being considered (so social workers can start working on that aspect from the start). If the patient requires admission, they can be either in a specific ward (e.g. pneumology, infectious disease or internal medicine) or occupy one of the 24 multipurpose beds available at the Geriatrics Department (for the frailest individuals or at end-of-life patients).

• Managing discharge:
Intense planning ahead for the discharge moment is done between ProPCC-AP and ProPCC-AH teams and really starts from the moment of admission as an inpatient. At the time of discharge, a number of resources are then activated, and these may include the Hospital at Home service, the home support service (Servicio de Ayuda a Domicilio) and the Service for Vulnerable Old People (Servicio para personas mayores vulnerables) which is mobilised by the hospital social worker. Information on updated health and social needs is available in a pre-discharge letter that is sent by ProPCC-H to ProPCC-AP and that is stored in the Clinical Health Record of Catalonia, and available for all the actors linked to the integrated care process.

2.1.4. Facilitating elements and barriers

a) Facilitating elements:

- Government policies have promoted collaboration among different providers at the territorial level.
- The policies from the Catalonia Health Department have been enabling local providers to develop projects to support people with complex and advanced chronic conditions. The tools created by the Health Department have also been instrumental in the success of the projects. These tools include the identification of PCC/MACA populations throughout the Catalan system[39] supported by the GMA tool for identifying the populations with the highest morbidity, the PIIC and the Electronic Medical Record.
- A single territorial governance structure for primary and hospital care teams has been a key element to promote integrated care initiatives, facilitating buy-in and ownership from all the parts involved in the projects and a sense of working with a common goal.
- Although the creation and implementation of the ProPCC Programme has not had specific funds, it has received logistical support (e.g. Information Systems, Citizen Participation or Communications) from all the departments of the territorial management group.
- Meso-level management is open to innovation and is not risk adverse. The project has received full support from the top management team.
- The territorial management group has promoted initiatives and partnerships in several transversal projects in the territory, including chronic care, in the past few years. Strengthening primary care-hospital synergies has facilitated the collaboration between teams of different level of the ProPCC project.
- Citizen participation is one of the strengths of the ProPCC project. A working group of citizens was created at the beginning of the project to include patients' and carers' perspective in the design of the ProPCC model of care.

b) Challenges

- Interoperability of electronic health records to enable data transfer between different systems of different health and care levels and providers. The DCTC and the Information Systems Directorate worked together to adapt the electronic health records and different communication tools to overcome existing interoperability barriers.
- At the moment, there is a primary care-hospital communication form, an automatic activation of ProPCC teams triggered by a CIM-10 code assigned to people included in the ProPCC programme, a dashboard or Business Object to monitor entries/exits and progression in the programme. The identification and follow-up of the people in the programme enable monitoring progress and comparison with control groups in the same community.
- The fragmentation of health and social care among the other providers (non-ICS) in the area that are involved in the ProPCC project has been one of the biggest challenges to implement and scale-up the project. Providers who were out of the influence area of the territorial management team and, therefore, had different governance structures included key services such as home rehabilitation providers, intermediate care providers, and municipal social services. Involving different management and leadership teams in the design and implementation group facilitated overcoming the limitation of the governance structures and fragmentation.

2.1.5. Results

A retrospective observational analysis collecting data from May 2018 to December 2021 showed that ProPCC produced very promising results, with an impact on the experience of the patients, on the use of primary and hospital care resources and on the overall costs.[40]

Users' experiences

The authors of the programme and evaluation have suggested "time spent at home" as a primary indicator of person-centred care, especially for the population in their last stage of life.[41] Thus, the time spent at home by ProPCC patients in the six months after the intervention increased by 3% (approximately 5 days) to the time spent at home in the previous six months.

Care team wellbeing

The impact and experience on the care teams and practitioners of primary care and hospital has been closely monitored during the design and implementation process of the ProPCC project. Three participatory sessions have been organised since the development of the ProPCC project to provide feedback and share experiences by the professionals engaged in the implementation process. This iterative process has allowed the implementation team to evaluate the satisfaction with the implementation process and a channel to ensure communication with frontline workers to improve the model. The feedback received during these sessions highlight that practitioners perceive the ProPCC project very positively, provides them with tools to support people to better plan their care around their wishes and preferences, facilitate decision-making, which is valuable and beneficial for the people. Other elements that are considered positive include the case conferences, changes in electronic information systems to facilitate communication (such as the diagnostic code or the automatic activation of case management during hospitalisation), and the consolidation of experts in chronic care for the case management.

Population health outcomes

The programme managers have reported very good results in transitions after hospitalisation: discharges home in 8 out of 10 cases; mortality in 1 out of 10 and less than 15% of readmission to hospital after 30 days of discharge. There was an increase in the number of primary care visits, in particular through an increase in the use of primary care nurses and social workers; a 37.2% reduction in A&E attendance; 29.2% reduction in inpatient hospitalisations and a 38.3% reduction of the overall time spent at the hospital.

Cost-effectiveness

Cost analysis linked to health care resources use reflect a 46.37% of reduction of total costs, due to the large reduction in hospital costs.[43]

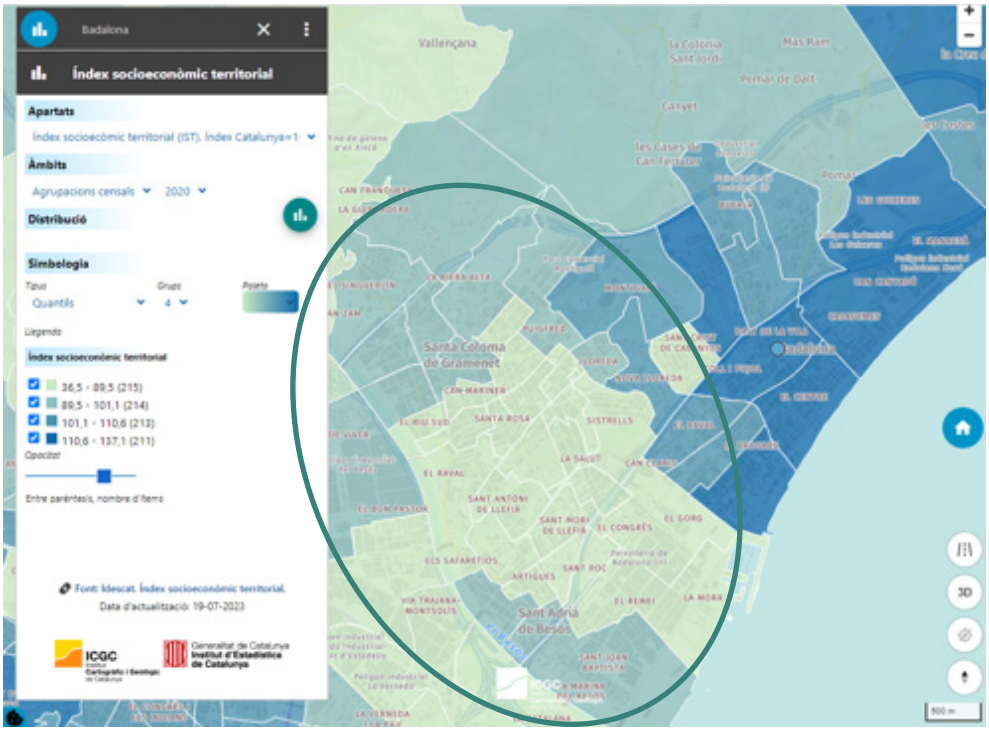
Equity

The ProPCC model aims to be a useful tool to ensure the coverage of social and health needs for a small population group with complex conditions, including disabilities and high social needs. The project was implemented in a more deprived area than the average in Catalonia or the city of Barcelona, which was a challenge and an opportunity to ensure everyone with high needs could receive a standardised case management at home, centralising community resources at all times.

The dashboard or Business Object of the programme has shown how up to 2,000 people with high social needs included in PCC and MACA programmes have received the standard care described in the model since the beginning of the implementation.

It has been observed that people from the most deprived neighbourhoods (e.g. Sant Roc or El Gorg in Badalona) have been able to have equal access to the resources of the ProPCC programme in comparison to other areas with less social complexity (e.g. Bufalà or El Centre). Figure 10 below shows differences in the socioeconomic index of the different neighbourhoods of the city of Badalona and reflects that ProPCC model is operating in the area with the lowest socioeconomic rates (highlighted in a red circle). In this sense, ProPCC is seen as an opportunity to activate community resources and provide access to more equitable care among people from different urban neighbourhoods.

Figure 8. Socioeconomic differences between neighbourhoods in Barcelona



Source: Instituto de Estadística de Catalonia, IDESCAT 2023.

2.2. CAREDOC Community Intervention Teams

2.2.1. Context

The territory and the organisation

CAREDOC is a not-for-profit GP cooperative which provides care services to a population of 611,000 people in the Southeast of Ireland. Initially CAREDOC was established by GPs to provide Urgent Out of Hours care for their patients with financial support provided by the Health Services Executive (HSE) in the Carlow and Kilkenny areas.

The Health Service Executive (HSE) is the publicly funded health care system in the Republic of Ireland, responsible for the provision of health and personal social services. It is organised into nine community health organisations (CHOs) which deliver primary and community-based services responsive to the needs of local communities. From March 2024, the HSE has been reorganised into six health regions , who will each manage all integrated health services in their area.

Over the years, CAREDOC has expanded the services it provides to the HSE, and so the Community Intervention Teams (CITs) programme is now implemented across CHO5 (South Tipperary, Carlow Kilkenny, Waterford, Wexford) and CHO6 (Wicklow, Dun Laoghaire, Dublin South East).

The Irish health system is largely financed through general taxation although half of the population has private voluntary health insurance to gain quicker access to diagnostic and treatment services. There is no universal coverage for primary care, and users must pay out-of-pocket for their drugs and primary care visits, although "some public health services are provided universally free of charge, such as maternal and infant care and immunisations".[45] Low-income population get primary and hospital care without charge but have to face longer waits for accessing services.

GPs are private practitioners who provide care for private fee-paying patients or public patients with medical cards or GP visit cards when contracted by the government.[46] GPs act as initial gatekeepers to secondary care.[47] Hospital care is predominantly provided by public hospitals, organised into seven hospital groups.[48]

Health policy reforms in Ireland

In 2017, a cross-party parliamentary committee published the 10-year health system reform programme known as the Sláintecare report[48], to deliver universal health care for all through an integrated approach to provide the right care, at the right time, by the right team of professionals and closer to home. The reform programme aims to reorientate the Irish health system towards integrated primary and community care. In pursuing this objective and as part of the Sláintecare reform, various initiatives have been launched, including the Enhanced Community Care (ECC) workstream.

The range of ECC interventions includes establishing community health networks ("that will provide the foundation and organisational structures that will enable integrated care with primary and acute care partners"), setting up Community Specialist Hubs (for the national Integrated Care Programme for Older People (ICPOP), for the national Falls Prevention Programme), the scaling of Community Intervention Teams or establishing virtual wards in community settings.[50]

2.2.2.CAREDOC Community Intervention Teams

Programme objectives and problems being faced

CAREDOC's Community Intervention Teams (CIT) is an acute care service in the community, formed by teams of specialized nurses, occupational therapists and physiotherapists who work through hospitals, referring patients for early discharge where applicable and with general practitioners referring patients directly to avoid hospital admission. The main objectives of the programme are to reduce or eventually avoid unnecessary hospital admissions and to facilitate the early hospital discharge of inpatients to be cared for in the community instead.

Origins and evolution

CAREDOC is a nonprofit GP cooperative set up in 1999. It was the first cooperative in Ireland and GPs pay a subscription fee to become members. Initially, they were commissioned to provide out of hours medical care by the HSE in the Carlow-Kilkenny area. Eventually, all GPs in that area joined CAREDOC and participated in the out of hours service and from there, the relationship with GPs across the region and the growth of the organisation has continued over the years. At the moment, CAREDOC has over 600 GP members.

In 2010, CAREDOC developed the CIT model, working with hospitals and GPs to identify and refer patients for early discharge and with general practitioners referring patients directly to avoid hospital admission. In those years, Ireland was in the middle of the 2008-2013 economic crisis[51], with rising numbers of cases and very long waiting times for hospital treatment (including inpatient, day case, outpatient appointments and emergency admissions), alongside reduced budget and staff. The HSE National Service Plan 2009 had stated "the strategic intent to shift the balance of care from acute to community services… so the vast majority of patients receive their care at, or as close to, home as possible"[52]. Thus, within this economic and policy context, the CIT model was implemented in 2011, covering then a population of 120,000 people, and by 2023, they were covering the entire CHO5.

In addition to the GP Out of hours service (supported by a nurse-led triage telephone scheme and mobile units) and the CIT, CAREDOC's portfolio of work in partnership with the HSE includes a service for multimorbidity patients to proactively self-manage their health and wellbeing from home supported by a digital platform and nurse-led remote assessment and triage (SMILE).[53]

CAREDOC is run by a Board of Directors (with 19 GPs on the Board) and a management team. The organisation enters into partnerships with the HSE through service contracts, being thus accountable to HSE through the HSE Liaison Committee. In the case of Out of Hours service, the HSE fully funds the staff and infrastructure, while member GPs fund the medical doctor element of the service through the GMS contract via the Primary Care Reimbursement Scheme (PCRS) for state funded patients along with member doctors' subscriptions to CAREDOC. Private patients pay a fee at the point of care in the Out of Hours; however, the CIT is fully funded by the HSE for total population.

2.2.3. Model of Care/Constituting elements of the practice

CAREDOC CIT is an acute care service provided in the community. It is not a hospital-based intervention nor a GP-led intervention, but it is led by specialised nurses working in teams with occupational therapists and physiotherapists in the community.

The key elements:[54]

a) Community Intervention Teams

The service is delivered by experienced acute nurses who work within community and home care settings. In 2021 the service model was expanded to include Occupational Therapists and Physiotherapists. There are five CAREDOC CIT teams in total – Carlow/Kilkenny, South Tipperary, Waterford, Wexford and Wicklow. Deployment of CITs was decided by a joint CAREDOC/HSE group which looked at population density, demographics, logistics and efficiencies.

Teams are fully equipped with necessary medical supplies, vehicles and electronic tablets. Electronic medical records, instantly updated during home visits, allow all providers across care settings to access and share information as needed. Services they provide include intravenous therapy, catheterization, medication education and early hospital discharge support to postoperative patients or patients with chronic disease.[55]

One of the strengths of this service is the strong relationship that is forged between CIT health professionals and GPs. The service is built on having the support of GPs, who liaise closely with the service. When the patient enters the CIT service the GP gets a notification, and the GP is kept informed regularly on their patient's progress in the CIT programme.

b) Structured referral pathways

The number of pathways include oncology care in the community; heart failure[56], COPD and diabetes. Pathways are developed in conjunction with the hospital clinical groups and signed off by the joint clinical governance team - e.g. the Heart failure referral pathway is the result of the strategic planning between the CIT and the cardiology teams of the hospitals in the CHO area.

Hospital providers identify eligible patients for early discharge via a specially designed clinical algorithm.[57] Providers then complete e-referrals for eligible patients, triggering a phone call from the CIT to discuss each referral. A central hub at CAREDOC head office proceed to screen all referrals including for potential duplication with other services.

Accepted patients are then visited by the CIT shortly after being discharged and a personalised care plan is developed. The CIT facilitates early discharge from an acute setting, providing support and education to patients and carers, thus promoting independence and ensuring patient safety. The team provides education and medication reconciliation to patients, carers and their families, and communicates with multidisciplinary teams, thus pre-empting relapse or crisis. Patients are eventually released under care of the CIT, usually for a period of 72 hours but as long as medically needed.[58]

Pathway: Shared Oncology Care in the Community[59]

The CIT service liaises with oncology specialist staff to identify individuals who are eligible for community based anti-cancer therapies and associated supportive care, reducing the need for hospital attendances. The CIT team are equipped to communicate where necessary with GPs and hospital oncology staff, providing a link between patients and their health care providers. The continuing care delivered by the CIT team reduces both planned and unplanned presentations to hospital and offers improved quality of life for oncology patients who may otherwise need to attend outpatients' hospital departments for prechemotherapy bloods and disconnection of infusion pumps.

Pathway: Referral process for Health Failure[60]

The referral process for Heart Failure patients who do not respond to management with oral diuretics and require administration intravenously is led by the Cardiology team in local acute hospitals. Rather than request that patients who require IV diuretics attend hospital they can alternatively be managed safely at home by a CIT nurse, in conjunction with adequate carer support.

CAREDOC CIT nurses have the requisite skills to administer IVs as well as ample knowledge of Heart Failure to identify exacerbations that should be alerted to the Cardiology team.

Patients are asked to monitor their weight daily and maintain their fluid balance chart themselves… Patients must attend the Heart Failure clinic weekly for bloods and ongoing review, ensuring that while being cared for at home by CIT nurses, they are continually being monitored by their specialist team, thus reducing potential exacerbations and subsequent admissions.

c) Effective use of information technology

The CIT ICT platform[61] is linked to the software systems of GP surgeries, acute hospitals, out of hours service. This allows CITs to generate electronic medical records which are instantly updated during home visits.

The Hospital can refer a CIT patient through a secure weblink form connecting the HSE network to the CIT network while the GP can generate and electronic referral through their in hours software using the National referral template. On discharge from the CIT, an electronically generated summary is sent to the GP, the hospital or the public health nurse (PHN) via the national messaging systems (Healthmail or Healthlink as appropriate).

d) Governance structures

In addition to the day-to-day operational management by CAREDOC, two types of Joint Committees with hospital professionals and GPs are involved in the governance of the CIT service:

- A joint HSE/ CAREDOC Clinical governance committee is responsible for the monitoring of quality and standards of the CIT. This committee is comprised of: Hospital Consultant Geriatrician; Assistant Director of Public Health Nursing; Nurse Manager; Area Manager Representative; CAREDOC Medical Director and Directors of Nursing/Operations; Occupational Therapist; Physiotherapist; Hospital Pharmacist; Hospital Microbial Pharmacist; General Manager Community Services; Bed Planner; Discharge Planner; GP Representative.
- The Overall Governance Committee is comprised of the CHO5 Head of Primary Care; Director of Nursing, Hospital; Public Health Director of Nursing; Consultant Representatives; Care of Elderly Nursing Lead; Private Nursing Home Representative; Hospital Pharmacist; Hospital Microbial Pharmacist; CAREDOC Clinical Lead; CAREDOC General Manager; CAREDOC Director of Nursing; Primary Care/Hospital Liaison Lead; Clinical Nurse Manager Hospital Representative.

2.2.4. Facilitating elements and barriers

a) Facilitating elements

- A context that fosters innovation and change management at the national and local level, including some funding, leadership at different levels and workforce capacity and capability (to some degree).

- National-level policies to support collaborative and integrated care models with special emphasis on primary and community care.
- Organising GPs in a not-for-profit cooperative model may have provided more balanced power relationships between primary care and specialised care.
- Previous history of local or informal communication and collaboration between providers.

b) Challenges

- There is no universal coverage for primary care, and users must pay out-of-pocket for their drugs and primary care visits, although some public health services are provided universally free of charge.
- Interoperability of electronic health: Ireland has not scaled-up electronic health records. The CAREDOC project developed an ICT platform linked to GP surgeries, acute hospitals, and out of hours services software systems. This allows CITs to generate electronic medical records, which are instantly updated during home visits.

2.2.5. Results

Care experience

People who experienced the service report to be pleased with the service provided; finding the quality of care to be high, flexible to needs and convenient. All the 117 respondents to the CIT Patient Satisfaction Survey 2018 reported being satisfied with the nursing care provided and to have received their care in the community and outside the hospital. Qualitative feedback consulted for this report reflected highly positive reviews on the service: e.g. “They are always at the other end of the phone. They have always been kind and courteous”; “I was able to leave hospital earlier, I was happier at home and my recovery was quicker as a result. Less likely to pick up infection. I was back to independence quicker”.

GP and consultant experience

All of the 20 GPs who responded to the CIT GP Satisfaction Survey 2018 reported being satisfied with the CIT service provided to their patients and that the referral to the CIT prevented the patient from having to attend the hospital. 16 of the respondents valued the service as excellent, 3 as very good and 1 as good. In the words of a Consultant Physician from one of the area hospitals: “The CIT service is a very positive initiative that is enhancing the care of patients, by both facilitating early discharge from hospital and also avoiding certain hospital admissions. It is an excellent example of enhanced co-operation between primary and secondary care.”

Population health outcomes

CAREDOC informs that the CIT service has managed to reduce hospital admissions, hospital length of stay and out of hours calls to primary care. Between September 2012 and September 2013, the initiative provided nearly 4000 interventions between 2012 and 2013, averting 2,300 hospital bed days and 215 ambulance trips. It has reduced patient lists awaiting treatment by the cardiology team, it has decreased the number of patients needing in-hospital care, which in turn reduces possible risk of frailty from long-term admission for these patients, and it has supported people to stay in their own home for ongoing treatment”.[62]

Cost-effectiveness

CAREDOC has reported 50% savings on the cost of the CIT intervention versus the cost of a hospital bed night.[63]

2.3. The Care Ecosystem in Leuven

2.3.1. Context

The territory and the organisation

Belgium is divided into three highly autonomous regions based on territory – Flanders, Wallonia and the Brussels-Capital Region. The region of Flanders has the largest population group, it covers the north of the country and Leuven is one of the main cities, with a population of 102,236 (in 2022).

The Belgian health system is based on compulsory health insurance[64], with health insurers being not-for-profit organisations. The governance of the health system is shared between the Ministry of Health, the three regions and three Federated entities (three Communities based on language – Dutch, French and German).

Thus, in Flanders, the regional government is responsible for managing the compulsory health insurance, for setting the hospital budget and for regulating health products and professionals.[65]

Primary care providers are not-for-profit, self-employed independent medical practitioners who do not play a gatekeeping role, as service users have free access to medical specialists and hospital care.[66] Primary care providers choose to adopt multiple organisational arrangements, from GPs working solo to small teams of GPs and nurses to larger primary care organisations involving various primary care practitioners.[67]

Policy context

Belgium, and Flanders in particular, has been on a journey for decades towards integrated care models through multidisciplinary cooperation, patients' pathways and provider networks[68]. At times though, political reforms such as the 2014 reform of Belgium's Constitution may have created fragmentation and "undermined efforts towards integrated care".[69]

In 2015, a national plan on integrated care for people with chronic diseases, entitled Integrated Care for a Better Health, was approved[70] and 12 integrated projects were implemented across the country. "The pilot projects aimed to experiment with and test new care and financing models for chronically ill patients within a certain region".[71] The Zorgzaam Leuven (ZZL) initiative is one of those pilot projects. After the initial implementation phase, which ended in 2022, the pilot projects have had the option to register for a transition period (2023 - 2024) towards the structural introduction of integrated care in Belgium.

In 2017, the region of Flanders pushed for a reform of its primary care system, with a participatory and bottom-up approach and the intention to ultimately advance in the integration of health and social care. As part of this reform, Flanders set up 60 Primary Care Zones (PCZs), each covering a population of 75,000 to 100,000 inhabitants and one or more municipalities. Within the PCZs there are multiple arrangements to organise primary care. The ZZL initiative covers and uses the officially defined PCZ of Leuven.

The reform also included the setting up of an organisation to support the development of PCZs -the Flemish Institute of Primary Care – and the launch of regional hospital networks. Leuven PCZ aligns with the hospital network of the eastern part of Flemish Brabant which provides specialised care to six PCZs in total. However, the areas covered by hospital networks do not have any formal entity in the structure of the health system in Flanders. The only recognised areas for health care governance are the federal level and Primary Care Zones.

2.3.2. The Care Ecosystem in Leuven

Programme objectives and problems being faced

This case study analyses the care ecosystem for people with diabetes in the city of Leuven, which emanates from the interdependence of two separate programmes: a transmural diabetes management programme (Care Trajectories, CT) and a horizontal programme (Zorgzaam Leuven, ZZL or "Leuven Cares"). It shows how both vertical/clinical and horizontal/ community care -oriented programme combine and benefit each other. Currently other similar programmes like cardiovascular diseases, COPD, heart failure or mental health problems are also active in the same area.

CT is a diabetes integrated care programme between GPs and endocrinologists that has existed for decades. ZL is one of the pilot projects that developed from the 2015 National Plan. It is a collaborative programme with horizontal leadership that promotes the emergence of networks (Integrated Neighbourhood Teams, Caring Communities) and a data driven population health management programme for the entire region, which identifies local needs and provides risk stratification.

ZZL did not come in a vacuum, instead developed with the wealth of experiences and collaboration at the medical and clinical sphere and a culture of "medical integration of care" forged through the transmural programme for diabetes and other chronic conditions. But at the same time, ZZL and the development of the networks is bringing in more multidisciplinary coordination among professionals and levels of care, enhancing the conditions to implement the diabetes CT in primary care. Therefore, this case study shows how the primary-secondary interface benefits from the alignment of both programmes that results in the rise of a favourable overall ecosystem for the management of people with diabetes.

The 2019 OECD report on the State of Health in Belgium concluded that the main challenges for the health system were "to strengthen further primary care and to promote greater care coordination for the growing number of people with chronic diseases".[72]

Origins and evolution

The description in this section will differentiate between the two programmes: CT and ZZL.

Programme A: Care Trajectories for Diabetes Type II

In 1988, the Belgian government created a system of integrated care for people with diabetes at the specialist level, called the Diabetes Convention 786. The plan created 100 hospital-based diabetic centres across the country. Patients with both type 1 or type 2 diabetes who would adhere to one of these centres would get the whole of the care pathway for free, "getting treated by at least two insulin injections per day, benefiting from an intensive educational programme by a multidisciplinary team (led by an endocrinologist) and receiving free of charge material for home blood glucose monitoring, in order to optimize diabetes management".[73]

With a growing number of patients with diabetes, the limitations of the Diabetes Convention model became evident, including that it only targeted patients with insulin therapy (leaving out 72% of the whole diabetic population) and that most diabetes patients on insulin were treated in secondary care, while many of those patients (especially those who need 2 doses of insulin a day) could be cared for in primary care with the pivotal role of the GP"[74]. It was gradually perceived that the collaboration between convention centres and general practitioners needed to be reinforced (share-care), especially to improve the management of type 2 diabetic patients, who are increasingly treated with various insulin regimens".[75]

Hence, in the early 2000s, different initiatives aimed to enhance the coordination between both primary and secondary care in diabetes management and a new system was developed. The Care Trajectory (CT) for diabetes mellitus type 2 was implemented in September 2009 for "patients in an earlier phase of their disease, in contrast to diabetes convention patients, who are often in a more advanced stage of diabetes".[76]

Programme B: Zorgzaam Leuven

ZZL started in 2018 as a government supported change management project, focusing on chronic care integration.[77] After the implementation phase, it is now going through the transition period (2023 - 2024) having expanded to the hospital network level and regionally to other parts beyond Leuven (e.g. the Neighbourhood Teams are expanding to the Arrondissement of Leuven, the eastern part of Flemish Brabant). The roll-out will be gradual, with specific evaluation of context-dependent factors influencing the process towards integrated care.

2.3.3. Model of Care/Constituting elements of the practice

The key elements

Programme A: Care Trajectories

a) A binding contract

The entire CT builds upon a 4-year renewable contract between the patient, GP and specialist, that regulates their interaction and binds the three parties to comply with a set behaviour and expected actions, as a requisite to be reimbursed or receive financial incentives.[78] Thus, people with diabetes are incentivized to go to the GP; the GP is (economically) incentivized to refer patients to the specialist, while the specialist is incentivized (economically) to return the patient to the GP.

b) GP as the care coordinators

"Within the multidisciplinary care environment, the GP acts as the coordinator of the medical management according to an individualised care plan"[79], while the specialist's role is to advise the GP and patients on clinical aspects of diabetes care.

c) Communication

An IT system allows GPs to ask clinical questions, which are responded by hospital specialists through a process called "collegial consultation".

d) Local multidisciplinary networks

"In order to facilitate multidisciplinary care, new local structures, known as "Local Multidisciplinary Networks" (LMN), were set up with the financial support of the National Institute for Health and Disability Insurance (NIHDI). In these networks, a new care manager function, the care trajectory promoter, was introduced".[80] When these LMNs eventually stopped operating in 2019 across Flanders, however in the Leuven area, their tasks continued as part of the ZZL work.

Programme B: Zorgzaam Leuven

a) A web of multidisciplinary networks

The ZZL project created a system of networks to improve cooperation between first-line providers in the neighbourhood (primary care level cooperation) and primary, secondary and tertiary care levels (transmural cooperation).

- Thus, **Integrated Neighbourhood Teams** (INT) operate at the primary care setting.[81] INTs bring together various care practitioners including General Practitioners, pharmacists, nurses, physiotherapists, psychologists, nutritionists and community workers. They are micro level networks providing community-oriented care with special focus on the most vulnerable population and establishing the basis for collaboration in primary welfare and care. They focus on the following domains: health care programmes, medication, care coordination, health promotion, neighbourhood care and population management.

  They are not permanent teams but open networks of neighbourhood-oriented care providers who work together to respond and adapt to the needs of the local community. They apply the standardised protocols and guidelines to the local context based on local resources, assets, population profile and needs. The INTs agree on disease management protocols and care pathways with special focus on people with chronic conditions and higher care needs.

  A neighbourhood team is not a care delivery team in the sense that its role is not to directly provide care to individuals but to implement existing pathways to the local context. However, individual members of the neighbourhood teams are also part of individual care teams that are involved directly in the care of individuals. This means that the frameworks and local action plans developed by the INTs are applied by individual care teams.

  There are eight neighbourhood teams in the city of Leuven.[82] In October 2022, up to 60% of primary care providers were voluntarily engaged in the integrated neighbourhood teams (covering up to 4,000 people in the community). Each of the eight INTs has a cooperation agreement in which the members declare their commitments and to which the neighbourhood team action plan and budget are added annually.

- The INT networks have been created following a call launched by the ZZL team who leads the project. Participation in the networks is on a volunteer basis, following the principles of shared interest to provide better care through integrated care and provision of care to the same population. There are no strict geographical boundaries defining the networks. **Transmural teams** are created by the initiative of specialist care or primary care. Most of the groups are mixed with practitioners from both primary and secondary care. Their often-temporary role is to design the guidelines and care pathways in different areas following international guidelines. Transmural specialist teams do work on shared care to treat people with chronic conditions at home, including psychological conditions, and can also work on the outflow of patients to intermediate care and seamless discharge guidance.

- **Caring Neighbourhoods** are incentivized by the Flemish Government as a part of a recovery plan after the COVID-19 epidemic. 133 of these community networks sprouted in Flanders to reinforce resilience. Their aim is to work on participation and inclusion, connecting informal and formal care and to promote intersectoral collaboration between partners working in care, welfare and other domains. ZZL did engage with the three caring neighbourhood networks that were formed in Leuven, especially aiming towards collaboration and connection.

b) Coordination roles

The programme incorporates various coordination roles.

- At the team level, the INT coach is a member of the team who is tasked with the operational management of the team. They work closely together with the ZZL management team.

- The INT care coach works on the level of the person with needs. This is one team member who is engaged with pro-active care coordination of people with complex needs. Other team members can ask for support when more coordination is needed.
- At the programme level, a ZZL Programme management team is a small back-office structure with 3 FTE people.
- To catalyse an integration movement amongst all professional caregivers and local organisations towards population-based integrated care, a regional "integrator" has been set up.[83] It is formed of about 40 people from the 60 collaborating organisations, representing the INTs, Caring Neighbourhood and Transmural teams, partner organisations, academics, etc. It functions as a back office for health care professionals, supports neighbourhood teams and transmural teams and provides nudge-wise financial incentives to support integrated care starting from a population health approach . Aiming to be a collaborative movement with horizontal leadership, it is supported by a number coordinating structures (a back-office core team; a Steering Committee; a jointly shared dashboard to monitor and adjust all activities).

c) Data driven population management for the entire region[85]

ZZL takes a proactive approach to manage the health and wellbeing of a population through the intense management of population data. Information to identify local needs and select the target population is supported by a dashboard in which electronic health records are analysed for risk stratification. Stratification helps in understanding the gaps in the usual care and how to implement and adapt the intervention to support people at the local level. Data is for example used to find those diabetic patients who are not compliant enough with their prescribed treatments, so they can be outreached and work with them to improve their compliance.

The interaction between CT and ZZL

Much of the interface coordination happens already within INTs, which bring together a number of health care professionals. A second scenario where the interface takes place is between INTs and the programmes that are elaborated by the transmural teams. This interaction is facilitated by the back office of ZZL that provides support to implement these programmes as well as to take action in domains that are not covered by the transmural programmes but are still necessary (e.g. prevention; awareness and communication activities; etc.).

2.3.4. Facilitating elements and barriers

a) Facilitating elements

- National-level policies support integrated care models through multidisciplinary cooperation, patients' pathways and provider networks.
- A context that fosters innovation: In 2015, a national plan on integrated care for people with chronic disease (Integrated Care for a Better Health) supported the implementation of 12 integrated projects with the aim to explore and test new care and financing models.
- Reform of Primary Care in Primary Care Zones in 2017. Within the PCZs, there are multiple arrangements to organise primary care, and this model provides a more balanced power relationship between primary care and specialised care.
- Previous history of local collaboration between hospital and primary care.
- Communication and data-sharing tools such as electronic health record
- Availability of population-level data to understand and monitor local needs.

b) Challenges

- Sustainability of funding and the fit in a wider reform: The Zorgzaam Leuven (ZZL) initiative was one of the pilot projects funded in 2015. After the initial implementation phase, which ended up in 2022, the pilot projects have had the option to register for a transition period (2023 - 2024) towards the structural introduction of integrated care in Belgium. However, the context of wider national reforms challenges the programme's sustainability and continuity.
- One of the key elements of the programme is collecting and interpreting population data in the community to adapt care pathways and resources and monitor progress. However, there is a lack of data literacy in the care teams to analyse and understand data.

2.3.5. Results

There is no evaluation of the overall care ecosystem in Leuven including both programmes as described here. However, some individual evaluations have been conducted.

A 2023 qualitative study that explored experiences and perceptions of health care professionals (HCPs) involved in ZZL concluded that the programme has created conditions that triggered work motivation for HCPs and increased collaboration. "Professionals appreciated being involved in the decision-making early on either by proposing their own initiatives or by providing their input in shaping actions. Improved team spirit and community feeling with other HCPs was reported to reduce communication barriers and was perceived to benefit both patients and professionals. The actions provided supportive tools and various learning opportunities that participants acknowledged. Technical shortcomings (e.g. lack of integrated patient records) and financial and political support were identified as key challenges impeding the sustainable implementation of the transitional care actions".[86]

While ZZL has a particular focus on vulnerable population, there is no hard evidence on the equity impact of the programme yet.

2.4. The Alberta Diabetes pathway

2.4.1. Context

The territory and the organisation

With almost 39 million inhabitants, Canada is divided into 10 provinces and 3 territories, each with their own government. Located in Western Canada, Alberta is one of the provinces, with 4.5 million people.

Provinces and territories fund and administer their own health systems, each with its own health insurance plan. While benefits and organisational arrangements vary, all Canadian citizens and permanent residents are entitled to a basic package of care services, free at the point of use, which two-thirds of Canadians complement with private insurance plans.[87]

In 2008, Alberta became the first provincewide integrated health system, bringing together 12 formerly separate health entities and moving services from municipalities to a new organisation, Alberta Health Services (AHS), responsible for promoting wellness and providing health care services (mostly acute) across the province.[88] Administratively, it is divided into 5 areas: North Zone; Edmonton Zone; Central Zone; Calgary Zone; South Zone.

Primary care practitioners are private providers, paid mostly on fee-for-service[89] and clustered in primary care networks. AHS runs 106 acute care hospitals, 5 psychiatric facilities and partners with 40 primary care networks. GPs act as gatekeepers, incentivised through financial incentives, while patient registration is not required.[90]

Health policy reforms in Alberta

In 2003, the Alberta Ministry of Health, the Alberta Medical Association (AMA) and the then-existing health authorities agreed to set up Primary Care Networks (PCNs)[91], which were eventually implemented in 2005.[92] They are formed by groups of family physicians who establish a joint venture agreement with the AHS to identify local priorities and deliver additional services in a specific catchment area. PCNs get capitation funding to provide those expanded services and programmes, including paying for non-physician health professionals and administrative staffing, out-of-office and 24/7 care, renovating equipment and premises and developing chronic disease management programmes. Indeed, diabetes management programmes have been a priority for most PCNs over the years.[93]

While membership is voluntary, the experience has achieved great buy-in from family physicians, with around 84% of them being members of a PCN.[94] At present, Alberta has 39 PCNs, comprising family physicians, nurses, nurse practitioners, dietitians, pharmacists, social workers and mental health professionals. The number of PCNs in the five areas of Alberta varies: There are 10 PCNs in the north zone, 8 in the Edmonton zone, 12 PCNs in the central zone, 7 in Calgary, and 2 in the south zone. The composition and arrangements of each network are unique. They can be defined by geographic parameters, natural referral patterns and existing patient populations.[95] Their governance can be structured in different ways, and health professionals may be based centrally or spread across the member clinics.

2.4.2. The Alberta Diabetes Pathway

Programme objectives and problems being faced

The Alberta Diabetes Pathway is a system-wide chronic care model of screening and treatment for diabetes developed by a Regional Diabetes Programme enhanced by the facilitating structures of a Primary Care Network (PCN).

By 2003, diabetes was a worrying health issue in Alberta, and the conventional model of care for patients with diabetes was not appropriate to respond to the rising prevalence of diabetes. The conventional model would be based on family physicians trying to manage them "in the office in 10- or 15-minute blocks, in keeping with a volume-driven, episodic health system" or eventually in diabetes speciality clinics. "Under this model, the impact of diabetes on the health system would be truly felt 10 years down the road, as the 80,000 diabetes patients…slowly head for the nearest emergency department".[96] The system was not working well for patients nor for their family physicians. There were long waiting lists, with people waiting up to 6 months to see a specialist and actually services were "available to only a small percentage of the diabetes population".[97] Diabetes specialists presumed they were seeing almost all new patients with diabetes, while in reality, they were only seeing 3.6% - the remainder were being managed in primary care.[98] Hence, there was a strong policy drive to tackle this health problem.

Origins and evolution

A Regional Diabetes Programme was first introduced in 2003 by Capital Health Authority (the organisation which later, in 2008, merged across the province with health authorities to become AHS).

Based on the Chronic Care Model, the Programme emerged from a creative process with primary and secondary care professionals that pivoted upon the sharing and showing of all of the data that demonstrated that family doctors were doing a good job at managing diabetes care in Alberta. Bringing in data, the promoters of the Regional Diabetes Programme showed that family doctors managed diabetes as well as specialists; and that after one consultation visit and two follow-up visits, any further specialist visits were not contributing much more. This evidence-informed recognition helped to forge mutual trust between family physicians and hospital doctors, eventually leading to agreement on a regional pathway to jointly deliver the best care for diabetic patients in Alberta. The core of the agreement was that patients would be supported with follow-up, education and treatment at the primary care level until secondary care interventions[99] were truly needed.

The pathway was first implemented in the Edmonton zone and included all eight PCNs and the hospitals in the area. The other zones followed in Edmonton's footsteps. Then, using the same principles and approach, the experience has been expanded to other chronic conditions, such as heart failure, COPD, dementia, obesity, etc.

2.4.3. Model of Care/Constituting elements of the practice

The key elements

A system-wide chronic care model of screening and treatment for diabetes was developed by a Regional Diabetes Programme enhanced by the facilitating structures of a Primary Care Network. The Regional Diabetes Programme included the following key elements.

a) Standardised clinical protocols and guidelines

Protocols and guidelines follow those of the Canadian Diabetes Association, but their local implementation derives from the interaction between primary and secondary clinicians across the province, who agreed upon a shared view of how to manage diabetes. Thus, it was agreed that most type-2 diabetes patients would be managed in the community. However, if after 6 months, the primary care team working collaboratively with the patient could not control the diabetes, then the patient would be referred to the specialist. Each major hospital in Alberta happens to have a specialty diabetes centre attached to it which provides most of the specialty, multidisciplinary care.

That way, primary care teams would manage most patients while specialists would manage the most complex or atypical patients, intervening on a short-term basis when appropriate and providing support and guidance to primary care teams.[100] Where possible, coordination was agreed to be done through phone consultations.

b) A centralized triage system for referral to diabetes services

Family physicians refer patients to specialists, to diabetes clinics or to education modules through a 24-hour central booking office. Referrals for diabetes education and specialty services all go into one regional source so patients are allocated to education sessions or to specialist appointments centrally, thus becoming a single point of entry. Primary care teams can call a diabetes information and advice line (DIAL) run by a regional community diabetes team (nurses and dieticians).

All diabetes referrals for specialists are screened by a nurse. If an urgent case is identified (usually a new type 1 patient) the patient is allocated to designated urgent slots.

c) Educational modules to patients by trained primary care nurses

Patients with a new diagnosis of type-2 diabetes can access diabetes education if desired. Most PCNs provide education, mostly one-to-one, but some have group sessions. Where the PCN does not have the resource, or if the patient desires, they can attend diabetes education in a Regional Diabetes centre.

d) Multidisciplinary teams for managing diabetes

PCN nurses and dietitians specialised in diabetes care are placed in different clinics across the PCN and work with the family physicians to manage diabetes. Patients may see the nurse, the dietitian, the family physician or all three, and the nurse follows up with patients proactively, provides ongoing diabetes education and reports back to the clinic physician.[101] As PCN nurses can manage a great bulk of the work, family physicians are free to see more patients.

e) Regional screening of test results to identify as many patients as possible

Patient data and test results from across the region are collected in a central disease registry, thus patients with high glucose levels or other indicators are contacted either by the family physician or by the PCN nurse.

The Diabetes Infrastructure for Surveillance, Evaluation and Research (DISER) tool integrates individual-level records from several clinical and administrative health care databases maintained by provincial and national data custodians. The data collected by DISER for each patient includes vital statistics, prescription drugs, lab results, medical visits, emergency department use and hospitalisations.[102]

2.4.4. Facilitating elements and barriers

a) Facilitating elements:

- Province-level policies support integrated care models. In 2008, Alberta became the first provincewide integrated health system in Canada.
- Reform of Primary Care in Primary Care Networks in 2005. This model of organising primary care provides a more balanced power relationship between primary care and specialised care.
- History of local collaboration, building trust, and a common vision among stakeholders in different care settings.

- Availability of population-level data to understand and monitor local needs.
- Communication and data-sharing tools such as electronic health records.

b) Challenges

- Payment mechanisms: Specialists were initially paid by fee-for-service and this was causing problems. So, many specialists, particularly those offering highly specialised care (e.g. islet cell transplantation) were shifted to alternate funding models.

2.4.5. Results

An early (2007) description of the programme concluded by providing an account of its success, "measured by improved access to services, increased system capacity (almost tripled with no new resources), improved client and provider satisfaction, improved health outcomes, sustained behavioural change for clients and more appropriate referrals to specialised care when required".[103]

Population health outcomes[104]

- Lower admissions to hospital or visits to emergency departments for diabetes-specific ambulatory care sensitive conditions.
- Proportion of patients who underwent guideline-recommended laboratory investigations for glycated haemoglobin level, urine albumin – creatinine ratio and cholesterol panels.
- Proportion of patients who saw an ophthalmologist or optometrist (a proxy for retinal screening).
- In person consultation was reduced by 25% and routine (non-value added) follow ups by specialists stopped.
- "Compared with patients whose prevalent diabetes is managed outside of primary care networks, patients in primary care networks had a lower rate of diabetes-specific ambulatory care sensitive conditions (adjusted incidence rate ratio 0.81, 95% confidence interval [CI] 0.75 to 0.87), were more likely to see an ophthalmologist or optometrist (risk ratio 1.19, 95% CI 1.17 to 1.21) and had better glycaemic control (adjusted mean difference –0.067, 95% CI –0.081 to –0.052). Patients whose diabetes was managed in primary care networks received better care and had better clinical outcomes than patients whose condition was not managed in a network, although the differences were very small".[105]

2.5. Keeping Well: Northern Sydney PHN, Australia

2.5.1. Context

The territory and the organisation

New South Wales (NSW) is the largest public health system in Australia including the capital, Sydney[106, 107] and it serves a population of eight million residents with 28% of the population aged 65 years and over. The system operates 228 public hospitals, 15 Local Health Districts (LHDs) and 2 specialty networks.

The Northern Sydney PHN area (Wellnet and Keeping Well geographic scope) has a population of about 914,000 people. It covers all the northern Sydney suburbs up to the Hawkesbury River, from Manly and Epping to Laughtondale and Avalon. It is coterminous with Northern Sydney LHD. The Northern Sydney LHD oversees 6 district hospitals.

Primary Health Networks (PHNs) were set up in 2015 in response to the Horvath review[108] which recommended that new, larger primary health organisations be established to reduce fragmentation of care by integrating and coordinating health services, supporting the role of general practice, and leveraging and administering health programme funding. NSW has 10 Primary Health Networks. PHNs are independent organisations that the Australian Government funds to manage health regions. A board oversees their work, and clinical councils and community advisory committees provide advice. PHNs act as local agents of change in Australia's health system. PHNs have the 2 key goals of:

- improving the efficiency and effectiveness of health services for people, particularly those at risk of poor health outcomes
- improving the coordination of health services and increasing access and quality support for people.

To achieve these goals, PHNs:

- assess the health needs of their region using a people-centred approach
- commission health services to meet the prioritised health needs of the people in their region
- work closely with providers to build health workforce capacity and ensure they deliver high-quality care
- connect health services for people to encourage better use of health resources and avoid duplication.

The PHNs are funded through a grant process. Their funding is dependent on performance, which the governments assess against national and local indicators set out in a performance framework.

PHNs have structures that ensure various stakeholders are involved in decision-making. This includes:

- skills-based boards – made up of experts from various fields with health and corporate expertise
- GP-led clinical councils – made up of doctors, nurses, allied and community health staff, Indigenous health workers, specialists and hospital management staff
- community advisory committees – made up of consumers and carers who have experience with and insights into the health system.

Chronic Disease Management Programme and Integrated Care Initiatives

The origins of Keeping Well can be traced back over two decades. It has been built on the development of PHNs in NSW and subsequent iterations of the programme follow current state level priorities to integrate care across LHDs through greater collaboration. It was a model implemented as part of the NSW Chronic Disease Management Programme (CDMP) in 2009 which was a community-based, integrated model of care, providing coordinated services and health coaching to manage the health of people with diabetes, congestive heart failure, coronary heart disease, chronic obstructive pulmonary disease, and hypertension. It also involved developing shared care plans with general practitioners and other health professionals. In 2014, the NSW Integrated Care initiative evolved this further to empower patients and carers by fostering new ways of coordinating care and prioritising primary and community care, improving transitions of care from the Emergency Department (ED) to community, specialist outreach to primary care, residential aged care facility staff support, alternate triage pathways to reduce low acuity ED presentations, care coordination for vulnerable families, and upskilling staff working in paediatric networks. In 2016, the Leading Better Value Care initiative brought together clinicians, networks and organisations to work on high-impact initiatives to improve outcomes and experiences for people with specific conditions including: osteoarthritis, osteoporosis, heart failure, diabetes, chronic obstructive pulmonary disease, renal conditions and falls in hospital.

Another key initiative that has shaped the evolution of initiatives such as Keeping Well is Australia's Primary Health Care 10 Year Plan 2022–2032 which sets of the plans for future focused health care; person-centred primary health care supported by funding reform; and integrated care, locally delivered.

One of the main mechanisms of this plan is joint planning and collaborative commissioning at regional and state-wide levels to enable more coordinated the interactions between primary care services, specialist and hospital services, the aged care and disability care systems, and other social support systems. This is the main vehicle for enabling initiatives like Keeping Well to sustain and scale across Northern Sydney. Sydney North Health Network (which operates the PHN) and Northern Sydney LHD are the partners in this collaboration.

2.5.2. The Keeping Well programme

Programme objectives and problems being faced

The initial focus of Collaborative Commissioning in Northern Sydney is to improve integrated services for older people. The role of such collaborations is to "assess existing service provisions and gaps for priority population cohorts, and collaborate across silos to jointly co-commission services as part of a comprehensive care pathway to address those gaps."[109] Peiris et al. (2024) reported that a clinical audit conducted as part of the stakeholder engagement process when designing the Keeping Well programme, found that of 1,800 patients aged 75 years and older presenting to EDs, approximately 30% were determined by clinical teams to be suitable for management through existing community services.

Origins and evolution

This programme was built on the lessons learned by the Wellnet Programme, which ran from 2016 to 2019. The Wellnet programme was developed to address secondary prevention of chronic disease in primary care by increasing patient self-management of chronic disease (measured using Patient Activation Measures) and enhancing general practitioner engagement in the Primary Care Medical Home (PCMH) model of delivering care for patients with chronic diseases/multimorbidity (qualitative data) first established in the US.

Secondary objectives included improving specific clinical / disease outcomes, patient satisfaction, quality of life of patients living with chronic conditions and reducing the likelihood of developing hospitalisation. The population scope was patients on the GP caseload aged 40 and over, diagnosed as living with one or more chronic diseases. There was minimal involvement from hospitals, and whilst the programme was successful in delivering against its objectives, its time-limited funding, small-scale operating model and scope limited to general practice meant that it was not sustainable or scalable.

In 2022, under the Collaborative Commissioning initiative, Northern Sydney PHN and LHD agreed to fund a programme to reduce hospital admissions for older people over 75 years . The initiative brings together federal (primary care) and state (community health services and hospital) funding.

The principles of the programme include a focus on care coordination across primary and secondary care, the use of integration decision-support tools (HealthPathways) that source data from hospitals and primary care and the use of social prescribing to enhance health outcomes for the target group. It has not yet been adopted across all general practices in the PHN but focused on a 'coalition of the willing'. PHNs are seen as a catalyst for this change given their constitution as providers of general practice continuing professional development.

2.5.3. Model of Care/Constituting elements of the practice

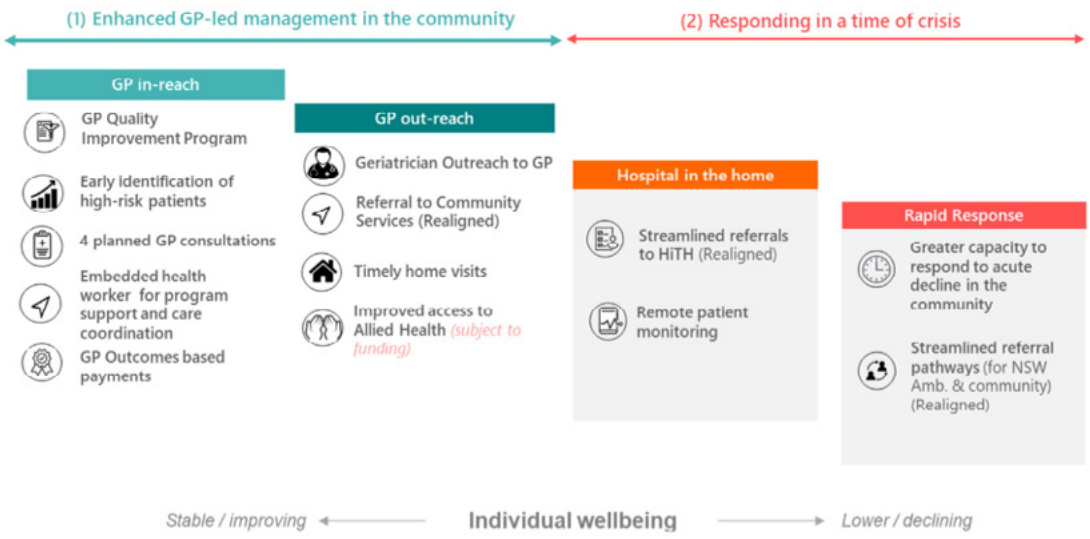
Keeping Well is a programme to identify patients who are at risk of presenting to ED and having unplanned admissions and provide them with ongoing care and management led by their GP and specifically tailored services to assist with patient's needs. The aims of the programme are to:

- Develop a systematic approach to identify high-risk patients using hospital data and/or General Practice data.
- Provide a proactive and preventative approach to care for older people including access to regular GP appointments and/or increased time during appointments for quality interactions.
- Enhance the patient's experience of care by keeping them well and independent at home.

The key elements

The care pathway for Keeping Well is based on greater collaboration across primary and secondary care interface than Wellnet and to improve care transition and communication across the interface. Figure 9 below shows the four components of the Keeping Well Programme.

Figure 9. Components of the Keeping Well programme



a) GP in-reach and out-reach

The Wellnet programme provide some of the foundation for this aspect of the Keeping Well model of care. In the Wellnet programme GP-led care was integrated with trained and specialised chronic disease management Care Coordinators (CC), usually nurses, within each participating primary care practice. Seven in-person visits and three telephone consultations were provided to identified patients with the CC and/or the GP.

The model stated with an initial comprehensive health assessment, followed by a Wellnet care plan supported by cdmNet, an electronic shared care planning platform. It also included 'GoShare', a health coaching and self-management platform and a mobile application called 'MediTracker,'. Both are linked directly to the clinical records held at the practice, providing access to information such as current medications, pathology results, diagnoses, and immunisation status.[112]

Keeping Well is working with GP practices to identify those practices with relatively high numbers of older people presenting frequently at ED and provide geriatrician support every three months to the practice. Hospital and practice data is shared to identify the target patient group.

The first component (in-reach) of the model of care sits within primary care. GP practices are provided with the risk stratification tools to identify those people on their caseload at risk of hospitalisation and ED presentation. This tool integrates data from the hospital and general practice to identify people who have had multiple ED presentations in the last 2 years.

People aged 75 and over with multiple ED presentations are assessed using a standardised suite of tools.[113] Those assessed as high risk receive four planned appointments with the general practice team sometimes jointly with the geriatrician (out-reach).

Care is planned jointly by the GP and geriatrician and uploaded to both the GP record and the hospital record. In addition, people are offered care coordination from a CC or nurse. The role of the CC is to ensure the Practice is receiving letters and discharge summaries from local public hospitals in Northern Sydney and to Connect, refer to appropriate external services[114] and conduct home visits for patients that are enrolled into the programme, if GP deems appropriate and urgent. Unlike Wellnet, no health coaching is provided as part of this role. The CC also contacts any person over 75 years that is medium-very high risk within 5 business days of patient being discharged from hospital. The care plan is reviewed after 12 months using the same suite of assessment tools as the baseline.

GPs are reimbursed for the programme per enrolee with an additional outcome-based payment based on the achievement of quality measures (for example, admission avoidance).

The second component of the Keeping Well Programme is GP outreach and bridges primary and secondary care. A hospital employed geriatrician works collaboratively with GPs to manage people over 75 years with complex needs. Care coordination and navigation is also part of this component. Services are provided in people's homes and in primary care clinics. Ultimately, the programme will expand to include referrals to allied health services (for example, physiotherapy).

b) Hospital in the home

The third component of Keeping Well is hospital in the home (HiTH) which is a hospital run home monitoring service. The North Sydney Local Health District hospitals, Royal North Shore, Hornsby, Ryde, and Mona Vale have been running this service for a number of years. Senior HiTH clinicians in the hospital triage referrals and a management plan is confirmed with the primary care provider.

c) Rapid response

The fourth component is the Aged Care Rapid Response Team (ARRT). This is also sited within the hospitals (Royal North Shore and Ryde) and is made up of geriatricians, nurses and physiotherapists. It provides outreach services to residential aged care facilities to avoid unnecessary hospitalisation. Referrals come from Ambulance NSW, community services, and GPs, and the system partners have worked with Ambulance NSW to streamline pathways through emergency calls and the virtual care contact centre.

2.5.4. Facilitating elements and barriers

a) Facilitating elements

- The joint commissioning arrangements, regular meetings and shared leadership for the programme.
- Linked data set and shared care record across primary and secondary care.
- Administrative data is also shared across general practice and hospitals twice a year to support the monitoring and evaluation of the model of care.
- In-built research and evaluation for system feedback and learning.
- Bringing together federal and state funding and designing funding arrangements to reduce the risk of reduced activity income for hospitals should the project deliver its goal of reducing avoidable admissions and ED use.[115]
- Digitally enabled care pathways locally agreed (HealthPathways).

HealthPathways was first established in 2008 in Canterbury, New Zealand. Since that time, it has spread across New Zealand, Australia and the United Kingdom (Gray et al., 2018). Within NSW all but one region was covered by a HealthPathways programme prior to the pandemic, this region received access during the pandemic. Now all of NSW Primary Health Network (PHN) regions are using HealthPathways. In Australia, all eight states and territories have HealthPathways programmes; however, some areas within the states do not have a HealthPathways programme. Internationally, there are nearly 50 health systems that have HealthPathways (Streamliners HealthPathwaysCommunity,2023).

HealthPathways is an online decision support tool, primarily aimed at GPs. Access is available (at no cost to the user) to any local health care worker. In HealthPathways, the decision support helps GPs to assess, manage and refer based on up to-date evidence-based information in the format of "pathways." The pathways contain localised, concise, and pragmatic clinical information that can be used during a patient consultation and contains resources for patients and clinicians, referral information and treatment options.

Having referral pathways in the same programme as clinical pathways is what sets HealthPathways aside from many other decision support tools, as most only list clinical assessment and management. further detail, including images of a pathway. It is important that the information in HealthPathways is developed collaboratively between local hospital Specialists and local GPs.[116]

b) Challenges

- Time limited project again (12 months) without clear commitment to long-term sustainability.
- Workforce constraints – GP's, practice nurses, geriatricians and allied health professionals are all in limited supply in Northern Sydney.

2.5.5. Results

The Keeping Well programme is still at the very early stages of implementation, so results are limited. Given that the programme is built on the lessons of the Wellnet programme, these have been included below.

Wellnet

Experience of receiving care

As part of the Wellnet programme evaluation, over 90% of participants reported being satisfied or strongly satisfied with the coordinator. 80% of participants agreed or strongly agreed that their care coordination was efficient in organising their course of treatment and more than 90% agreed or strongly agreed that the care provided was comprehensive. Over 70% of participants positively reported better communication and an ongoing relationship with their GP and care team with the added benefit of being involved in making decisions to effectively self-manage their chronic condition/s.

Care team experience

Anecdotal feedback from nurses engaged in care coordination and health coaching was that they enjoyed the relationship they were able to build over time with people in the programme. However, these nurses also reported that they did not feel an embedded member of the practice team as they were in each practice only one day per week and funded from outside.[117] Overall, GPs held positive perspectives toward the Wellnet programme. Most clinicians (>70%) agreed or strongly agreed that they were familiar with the concept of the programme. GPs also reported to have excellent relationships with their primary care team (85% agreed or strongly agreed) as well as had confidence that clinical teams were providing highly coordinated care (77%).

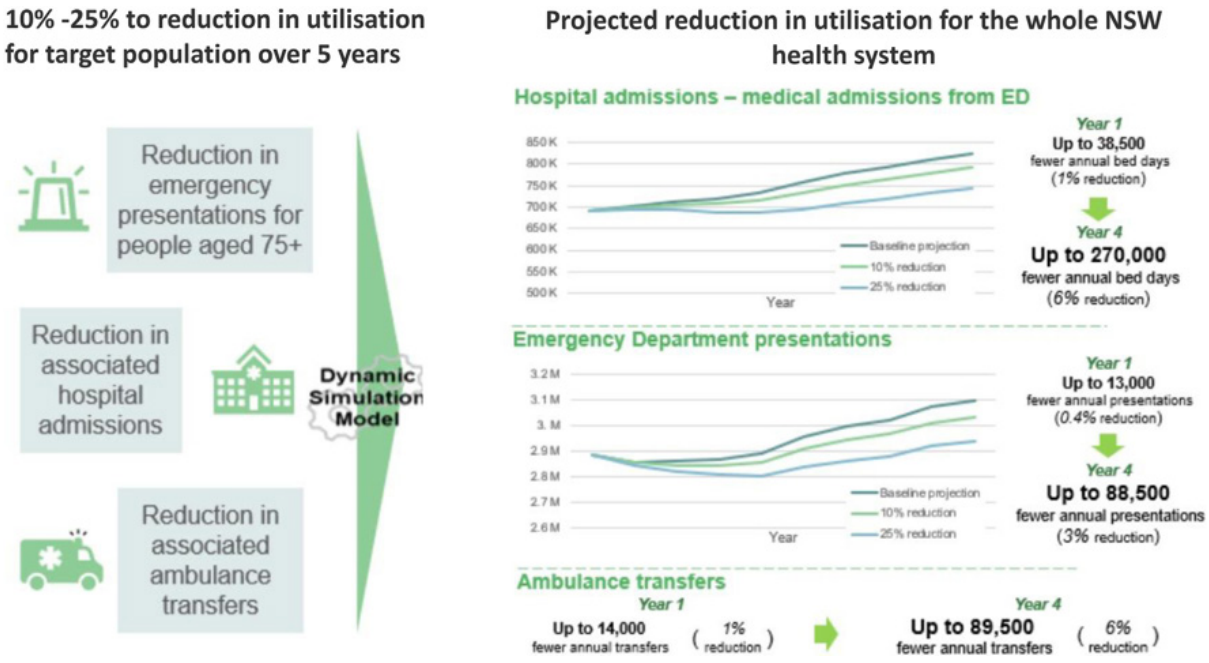
Population health

Actual hospital utilisation was not reported but patients included in the Wellnet programme had a mean hospital admission risk profile (HARP) score at baseline of 15.9. At follow-up, there was a significant reduction in the overall mean HARP score of 1.9, indicating that the average risk of hospitalisation had reduced.[118] For patients with risk of CVD, the Wellnet group saw a significant reduction in the mean CVDR score at follow-up of 0.90, with a 6.6% decrease in the proportion of participants in the higher risk category and an increase of 3.1% in the proportion of participants in the lower risk category. Other clinical indicators (mean systolic BP, weight reduction and cholesterol levels) were all reported to be reduced but not all statistically significantly. Patients with diabetes did show statistically significant reductions in HbA1c scores. There was small but significant increase in health-related quality of life measured by the EQ-5D tool. Mean scores increased from 0.79 to 0.82, a 4% increase.

Keeping Well

There are no results yet available from Keeping Well other than one prospective modelling exercise undertaken to model the predicted likely impact of Keeping Well on utilisation. The evaluation partners of the programme are planning to focus on care utilisation, quality, and patient and provider experience to evaluate the impact of the pathway.[119] This modelling (using a range of assumptions) of the impact of the implementation at scale across Northern Sydney is summarised in the figure below.[120]

Figure 10. Impact of the Keeping Well programme



3. Analysis and discussion

3.1. A mix of coordination mechanisms

How have these international case studies managed to overcome the coordination challenge across the great divide between primary and secondary care? This has been the question that has driven this research. How have these innovators managed to coordinate the work of primary and secondary care across the existing organisational divide to deliver the care to people with chronic conditions?

As stated in the methodological chapter, Mintzberg and Glouberman[121] identified six basic mechanisms through which health care organisations coordinate: mutual adjustment; direct supervision; standardisation of work processes; standardisation of outputs; standardisation of skills; standardisation of norms. These authors noted that organisations usually deploy all six coordinating mechanisms, although favouring the standardisation of skills and knowledge, which was probably the consequence of the author's focus on "acute cure clinical operations" as the purpose of the coordination between organisations.

More recently and going beyond the acute care perspective, Terraza et al.[122] have argued that, while health care organisations have historically used the standardisation of skills and (more recently) of processes, the management of chronic conditions require the use of other type of mechanisms, fundamentally mutual adjustment and direct supervision. Mutual adjustment would be particularly essential as the management of chronic conditions requires the involvement of multiple care providers and at multiple moments in the care process, with a high volume of information to be exchanged and high levels of uncertainty on the tasks and scope of the interventions.

Indeed, all case studies reviewed here have developed their own set of mechanisms for coordinating primary and secondary care for the management of chronic conditions. There is no single combination of mechanisms. As shown in the tables in the Appendix, the most used mechanism to improve coordination has been the standardisation of work, but then cases have combined different mechanisms such as mutual adjustment (ProPCC), direct supervision (CAREDOC), standardisation of norms (Leuven and Alberta). Despite its current interest in international discussions and in literature, the standardisation of outputs is the least of the mechanisms used.

Mutual adjustment

All case studies deploy informal mechanisms of coordination to manage the interface between primary and secondary care for patients with chronic conditions. This is particularly visible in the case of ProPCC, with informal communication through telephone held between ProPCC teams both in primary care and the hospital, informal meetings and when conducting joint home visits. Quick and informal exchange of information through the telephone takes place in Alberta as well, while the joint visits between the general practice team and the geriatrician are an opportunity for informal adjustment in Keeping Well. In Leuven, informal adjustment also takes place in the rich exchange within the web of multidisciplinary networks.

Direct supervision

In the case of ProPCC in Barcelona, the single governance and accountability mechanism that encompassed both primary and secondary care for the population was seen to be instrumental in integrating care across the interface. Although this unified structure was important, the leaders of ProPCC did not rely exclusively on it but built in significant work to involve primary care and a network of champions in primary care to promote and embed the new model of care.

In the case of CAREDOC in Ireland, the accountability mechanisms for the Community Intervention Teams have evolved over time. At the beginning, the accountability largely related to the HSE Service Level agreements and providing assurance to the HSE that targets were being met. Over time, trust was built, and accountability and governance arrangements were augmented by a wider set of stakeholders including secondary care through mechanisms such as the Hospital Liaison Committee. These mechanisms then became important sites not just for accountability but for problem-solving, shared learning and service development.

In Leuven, the fact that primary care does not play a gatekeeping role for secondary care, influenced the way that accountability mechanisms have evolved. The main mechanism has had to be through the 4-year renewable contract between the patient living with diabetes, their GP and hospital specialist and this is explicitly linked to reimbursement from the regional government administered health insurer.

In most cases where explicit impact data is collected, the emphasis is on reducing avoidable hospital activity. This is reflected in the design of accountability mechanisms and reimbursement incentives.

Standardisation of work

Pathways of care have been collaboratively defined by primary and secondary care health professionals in the models. The process of collaborative design was an important outcome in and of itself in that it opened a conversation across the primary and secondary care interface that had hitherto not happened. The HealthPathways approach used by Keeping Well, and many PHNs across Australia, is based on the Canterbury Model of Care and formalizes the collaborative design of health pathways for chronic disease across primary care and secondary care. This process also brings in clinical guidelines and evidence that allows for precise definitions of coordination of care.

Shared information across primary and secondary care was another mechanism of standardisation of work that featured in all the cases. This information enabled transparency of results and impact of the intervention and has been used to communicate the programme benefits to primary and secondary care decision-makers. The extent to which this feedback loop is consistent and formalised is variable, however.

In all cases, there was a long-term investment in creating the systems to capture, process and use data and information that underpins informed decision-making for coordinating care across the primary care and secondary care interface. In the case of ProPCC and Leuven this is being done at system level. In the case of Alberta and Keeping Well this is done at inter- and intra-organisational level more locally. In the case of CAREDOC, they developed their own information system. This was developed out of need to report to the HSE on service performance when the service was new and needed to 'prove' its value but quickly evolved into a key enabler of care coordination across the CIT's, primary care and hospitals. This investment in information technology is now a key asset for CAREDOC. The information collected in all cases is used to inform how the model of care is evolving within the system although this information is not shared transparently with the community.

Standardisation of Outputs

Standardisation of outputs/outcomes exists when the results of the work are clearly set up and staff deliver against those set targets. There is clarity on the purpose and goals of the programmes in all case studies. The CAREDOC CIT model, which is based on a service level agreement with clear targets and a support information system is an example of this. However, we have not found evidence of explicit exercise of setting up health and care outcomes for the patients at the individual level across any of the case studies.

Standardisation of Skills

These case studies acknowledged the importance of having enough of the right people in primary care to deliver these models of care, and they put great focus on how existing workforce are organised, or more importantly self-organised, differently.

Focusing first on capacity, one of the reasons for the limited impact of the Wellnet programme was the lack of nursing capacity in primary care. Despite the promotion of general practice nursing (GPN) in Australia since 2001, the role remains under-used and undervalued in general practice, although nurses are employed more widely in community services. Whilst policy making in Australia acknowledges the importance of the GPN role to address the demand and capacity gap in primary care, reimbursement and workforce development at scale have lagged behind especially for smaller practices. This contributed to the low uptake of the programme among general practices in Northern Sydney and the discontinuation of the programme despite recorded impact.

Workforce capacity constraints are a feature of all the health systems included in the case studies, but the response in all cases focused less on increasing capacity and more on organising differently. In the case of ProPCC, the ProPCC teams are drawn from primary care and secondary care. In order to allow these teams to meet and plan the support for patients with acute care needs to avoid hospital admission, they are given dedicated time for this collaborative case management.

In Alberta's Regional Diabetes Programme, GP reorganised pathways to funnel referrals through a single point of contact service with access to a telephone advice line before triage. The team has been widened to include PCN nurses and dieticians working together with GPs. This model will be very familiar to a UK audience.

In Leuven, like ProPCC, multidisciplinary teams in primary care (integrated neighbourhood teams) and secondary care (transmural teams) are formed to collaborate around the needs of specific patients. Their role is to work together to monitor and redesign as necessary local pathways and protocols to meet the emerging needs of the neighbourhood population. Members of these teams will also be member of individual care teams. These operate like special projects teams and membership is voluntary, reinforcing the self-organising philosophy. The teams in Leuven are being expanded to include Caring Communities networks which draw members from local citizens.

Common across all the cases is a focus on interdisciplinary team working across primary and secondary care. In some cases, this is guided by clinical protocols and agreed pathways as is the case for ProPCC, Keeping Well, Alberta and CAREDOC. In Leuven, the interdisciplinary teamwork is the starting point, and the pathways are evolving from ones that are sometimes led on the secondary care side, sometimes on the primary care side.

In all cases, GPs and hospital specialists are involved in the design of the model, the pathways and interdisciplinary team meetings alongside nurses and allied health professionals. In many cases the delivery of care is delegated by the GPs and specialists to the other health professionals. The inclusion of the patient and caregivers is the stated aim in most cases but remains largely unrealised. New roles such as care coordinators were developed in the case of Wellnet and have been retained as an option in Keeping Well but are not a feature of any other case study.

Standardisation of Norms

Multi and interdisciplinary teams and meetings are another common feature of the models of care and in the case of Leuven and ProPCC explicitly include GPs and hospital specialists as well as nurses, allied health professionals, social workers and care coordinators. These are the forums within which shared care planning and decision-making happens and through which trust is built.

ProPCC did this through the creation of a network of champions in primary care and early involvement of patients and caregivers in the design of the programme. In the case of Keeping Well, the experience of Wellnet taught the PHN that building relationships with the Local Health District which ran hospitals was the only way to ensure that hospital leaders would buy-in to what they were doing and would see how the new model of care would benefit their organisation. This relationship building was enabled by the Collaborative Commissioning initiative, itself built on the lessons learnt from previous policies aimed to increase integration in New South Wales.

CAREDOC, in retrospect, but probably not explicitly planned from the outset, had a systematic and iterative approach to building the relationships that now make up their eco-system. The focus of their relationships started within primary care, building confidence in the model of cooperation across practices. This was established quickly as GPs recognized the value of coming together to manage out of hours care. The next stage was building relationships with the HSE at local and national level. This took more time and was focused on assurance at the beginning but over time trust and confidence has been build enabling more creative and challenging conversations. The next stage focused on building relationships with hospital staff including consultants and nursing staff working in specialty areas. This evolved into formal mechanisms such as the Hospital Liaison Committee which now play a key role in the ongoing implementation and development of the service.

3.2. Mechanisms have developed in a facilitating context

We have provided each case study with an explanation about their policy and organisations context, but the purpose of this research study was not the in-depth analysis of the contextual factors that enable the implementation of integrated care projects. However, during our analysis, it was observed that all the examples had some favourable conditions that facilitated their development and implementation. Using the proposed model for the factors required for the adequate implementation of integrated care by Maruthappu et al.[123], we have summarized the contextual factors of each case in the Table below.

Table 2. Contextual factors for favourable conditions to implement Integrated Care projects

Integrated Care	ProPCC	CAREDOC	Leuven	Alberta	KeepingWell
CORE FACTORS					
Adequate financing	YES	YES	SOME	YES	NO
Changing clinical cultures	YES	YES	YES	YES	YES
Supportive regulation	YES	YES	YES	YES	YES
Flexible administrative reorganisation	YES	YES	YES	YES	YES
OVERCOMING BARRIERS					
Involvement of different care settings and levels	YES	YES	YES	YES	YES
Identification of target population	YES	YES	YES	YES	YES
Leadership / Coalition	YES	YES	YES	YES	YES
Funding realignment	SOME	NO	SOME	SOME	YES
ENABLING FACTORS					
IT infrastructure	YES	YES	YES	YES	YES
Clinical leadership	YES	YES	SOME	YES	YES
Common values	YES	YES	YES	YES	YES
Evaluation methods	SOME	SOME	SOME	SOME	YES

One of the main observations was that all the cases were developed in countries or regions that had been working towards a promotion of more integrated care models for a long time in response to the new demographic and need changes in the population. The policies supported the identification of the priorities and target populations, in many cases contributing to the development of population health management data and tools (Catalonia, Flanders, Alberta or NWS).

Existing regulations and policies fostered innovation and a higher level of collaboration between different sectors before the current projects were designed and implemented. Even though the process and history of each site is different, most of the cases referred to a previous collaboration between care levels (in a formal or informal form), that led to developing common values or purpose, change in the language and clinical culture, and identify champions and leaders. Hence, the policy, regulatory and financial context were favourable to facilitate mutual adjustment and the change in the norms among different care levels and settings.

The creation of primary care networks in one form or another (PCN's in Alberta, Canada; Primary Care Zones in Leuven, Flanders; Primary Health Networks / PHNs in Australia; CAREDOC as a primary care cooperative) created economies of scale for primary care, a sector which is structurally fragmented in most countries around the world. These networks are seen as important in creating a more level playing-field for primary care when collaborating with large institutions such as hospitals. Some cases made it explicit that the organisation of primary care had played a significant role in creating a more equitable power dynamic with specialist care, which allowed for the development of more collaborative projects.

In all the cases explored here, incentives, specifically funding and reimbursement mechanisms, have remained a critical challenge and limitation in delivering long-term scalable change. Most of the cases have had a period of financial support and resource alignment that favoured their development in the form of either pilot, research or implementation projects even if these changes were more conjunctural than structural in the funding mechanisms in most cases. The five cases present very different funding structures, but in all cases, there remains some level of fragmentation of reimbursement across primary and secondary care. In the case of Wellnet in Australia, the absence of long-term sustainable funding mechanisms that brought together state and federal funding and the method of primary care reimbursement that did not accommodate non-general practitioner contacts, contributed to the discontinuation of the programme. These lessons have been incorporated into the design of Keeping Well, including primary care reimbursement incentives for those practices that are taking part in the programme. Even though the temporary financial support and alignment of resources facilitated the implementation of the cases presented in this report, sustained financing and funding realignment remain a critical factor that may challenge the consolidation and scale-up of the cases.

Another enabling factor that facilitated the development of the coordination projects was the pre-existence of some type of IT infrastructure. The development of specific communication tools continued during the project, but most cases already had electronic health records, e-referral systems or digitalised advanced care planning available or planned. Many cases made it explicit that communication was not limited to having access to the same data and that informal and quick access to the team members and colleagues made a huge difference to solve clinical problems or problems related to the project itself. However, having access to shared information made the compliance to the care plan, decision-making and transitions between care settings much easier and safer.

One of the contextual factors required for the adequate implementation of integrated care proposed by Maruthappu et al. include the presence of evaluation methods. Most of the cases presented did not have a stablished mature and structured evaluation or learning system before the project implementation, and evaluation were developed "ad-hoc". However, some feedback loop between different care settings were in place most of the time. Sometimes the feedback loop was based on population management data whereas some other times, shared governance or discussion spaces created spaced to hear each other's feedback. Nonetheless, as it happens in most health systems, none of the sites had structured process in place to evaluate the project from the lenses of integrated care.

As commented at the beginning of this section, the understanding and in-depth analysis of the contextual factors required for the adequate implementation of integrated care projects is out of scope of this report. However, the observation of the collected data shows that many factors considered core factors, overcoming barriers and enabling factors proposed by Maruthappu et al. were already present with more or less maturity in all cases before the implementation of the initaitives. These factors included elements from the macro level, such as policy context, regulation, and finances, that enabled the design of innovative projects and allowed for the development of relevant tools like population management data or health electronic records. At the meso and micro level, the reorganisation of primary care helped to level the power relationships with specialised care, there was some culture of collaboration and partnership, and the new interaction spaces facilitated mutual adjustment and impacted the norms to work towards a common purpose. Consequently, favourable conditions facilitated the development and implementation of the cases presented in this work, and they cannot be understood without considering the importance of their own context.

3.3. Promising results but still way to go

Across all case studies studied in this report, although with different emphasis, the primary goal of enhancing coordination between primary care and secondary care is to reduce avoidable hospital activity (in particular, to reduce avoidable hospital admissions and attendance at emergency departments) by managing patients in primary care instead as much as it would be appropriate and possible.

While not all the case studies have conducted formal evaluations, the existing evidence reviewed here suggests that the selected case studies are achieving this goal. ProPCC reports very good results in reducing emergency attendance, inpatient hospitalisations and time spent at the hospital, as well as the discharge results, with very low readmission rates after 30 days of discharge. CAREDOC reports that the CIT service has managed to reduce hospital admissions, hospital length of stay and supporting people to stay in their own home for ongoing treatment in line with the service measures in their contract.

Alberta reports lower admissions to hospital or visits to emergency departments for diabetes-specific ambulatory care sensitive conditions, with a 25% reduction of in-person consultation. Building upon the results of the previous programme (Wellnet), Keeping Well is estimating between 10% and 25% reduction in attendance to emergency departments and hospital admissions.

The reduction in the use of hospital resources is impacting positively in the overall costs, with ProPCC reporting a 46.37% of reduction of total costs or CAREDOC reporting 50% savings on the cost of the CIT intervention versus the cost of a hospital bed night.

There are promising results of improvements in other dimensions, such as improved patient experience, improved care team wellbeing and improved equity. Existing evidence points to high satisfaction levels of service users with the CAREDOC CIT service, the ZZL programme in Leuven or the predecessor of the Keeping Well programme (Wellnet). ProPCC measures “time spent at home” as a primary indicator of person-centred care, especially for the population in their last stage of life.

Similarly, the level of satisfaction of the care workforce involved in the different case studies has improved due to the interventions. GPs and consultants who work with CAREDOC CITs report being satisfied with the service and with the role they play in enhancing co-operation between primary and secondary care. Experiences and perceptions of health care professionals in Leuven feel that the ZZL programme has created conditions that facilitate collaboration.

Finally, the measuring of impact on equity is uneven across the case studies and is perhaps a reflection that it may not have been such an explicit priority from the start of the interventions. However, improving access to services for population groups with complex conditions and high social needs in deprived areas has gradually become a key goal for many of the studied examples, including ProPCC and ZZL in Leuven.

4. Applying the international lessons to the UK

The UK context of integrating primary and secondary care is subject to variation across the four health and care systems. The Nuffield Trust[124] published a report comparing the experiences of the four UK countries on their integrated care journey. This report highlighted the key features of the integration to date across all four countries that are a helpful context to then draw lessons from international case studies. The research focused on integrating health and social care, but the conclusions apply within health care (primary and secondary care integration) too.

The Nuffield Trust concluded that all four UK countries:

1. Placed a heavy emphasis on structural and organisational change to promote integration while not paying enough attention to existing accountability mechanisms and incentives that promote fragmentation.
2. Did not recognize the relational nature of integration and requires investment of time and capacity building for collaboration and integrated leadership.
3. Insufficiently resourced workforce and infrastructure outside of hospital settings, making integration across organisational interfaces difficult.
4. Took a short or medium-term perspective in their planning and funding integrated care initiatives, leading to weak sustainability and embeddedness.
5. Did not define the mechanisms of integration precisely enough or adequately evaluate the effect of these mechanisms.

In the time since this report was published, the performance of all four health and care systems has continued to decline and in all four there has been a significant focus on reducing avoidable hospital admissions and attendance at emergency departments through Hospital at Home, Virtual Ward and Early Discharge initiatives. Many of these initiatives are focused on older people and people living with multiple conditions rather than one or two chronic conditions.[125] Below, we take these conclusions, align them with Mintzberg and Glouberman's six mechanisms, and apply them to the five case studies presented here drawing out lessons for the UK.

1. Direct supervision (Accountability and incentives)

In common with international examples, UK countries focus on accounting for system value accrued to hospitals. The collaborative accountability mechanisms at the primary-secondary care interface in the UK are immature compared to other systems (ProPCC, CAREDOC) and the PCNs are also at a relatively early stage in development. There needs to be more investment in PCN development, primary care inclusion in place-based governance and balanced incentives that account for positive performance impacts accruing to primary care (e.g. patient and caregiver experience).

2. Mutual adjustment and standardization of norms (Integration is relational)

All the case studies presented here reinforce the lesson that long-term sustainable integration across the primary and secondary care interface is contingent of relationships and the behaviours and attitudes that create the conditions for such cross-organisational collaboration to happen effectively. In many cases the conditions that enabled this to happen are long-term political commitment to integration and stable health system leadership.

All of the cases demonstrate the importance of building relationships that are systemised. While in the initial stages, the models of care relied heavily on one-to-one relationships or small groups of highly motivated and committed individuals, this needed to evolve quickly to a much wider network if the new model was to be sustainable.

The political commitment to integrating care is present in the rhetoric of politicians in all four UK countries but this is not always matched by actions when the health system is in crisis or missing performance targets. Integrating care across the primary and secondary care interface is not a short-term project and requires significant investment in relationship building for trust and confidence. This does not have to start at the top, but the top does need to be part of the process to create the right conditions. Shifting the emphasis away from a focus on measuring short-term effects (e.g. hospital-based activity) should be part of creating the conditions for building confidence and trust.

3. Standardisation of skills (Out of hospital workforce and infrastructure)

The introduction of Integrated Neighbourhood Teams (INTs) in some Integrated Care Systems (ICSs) in England reflects what we have seen in Leuven with a similar focus on acting as a source of local intelligence and informing service development rather than providing care. In the case of CAREDOC, the Hospital Liaison Committee fulfils this role in bringing together a multidisciplinary group that is empowered to make changes to the model of care if this is appropriate to meet changing population health needs. However, it is not clear that INTs in England are always inclusive of hospital specialists and other staff. This is an essential role if the gaps between primary and secondary care at the interface are to be addressed.

4. Long term planning perspective

In all cases, there was a long-term investment in creating the systems to capture, process and use data and information that underpins informed decision-making for coordinating care across the primary care and secondary care interface. Four of the five cases presented here evolved in the context of long-term policy commitments to integrated care. Catalonia (ProPCC), Alberta (Diabetes Pathway), Leuven (Care Trajectories and Leuven Cares) and Northern Sydney in New South Wales (Keeping Well) were all developed as part of a wider programme of reform aimed at either transforming primary care (Alberta and New South Wales) or creating better coordination for people living with chronic diseases (Catalonia and Leuven). The fifth case (CAREDOC) arose from a specific local challenge related to general practice capacity to respond to out of hours demand and influenced national policy as it moved to create the conditions for integration across primary and secondary care.

The long-term policy commitment to integrating care has been in place in all four UK countries for at least that last decade. Ensuring that this is supported politically irrespective of a change in government gives communities a sense that work they do with integrated care systems is sustainable and will deliver care that matters to them. Making space for primary care and secondary care coordination that focuses on population groups and specific chronic diseases, rather than one or the other, will be important in providing care that matters to people and communities.

5. Design of mix of coordination mechanisms (Define the mechanisms of integration precisely)

There were several mechanisms of integration that were shared across the cases explored here. The mechanisms we identified focused explicitly on the interface of primary and secondary care.

The NHS New Models of Care Programme that ran from 2015-2018 to design and test a range of models of care. Many of the mechanisms that were developed had the potential to transform the interface between primary and secondary care and mirrored those presented in the international cases. Some of these mechanisms persist today and have evolved such as Integrated Neighbourhood Teams and Rapid Response Teams, but the explicit co-production of these models across primary and secondary care is less evident as demand pressure and a focus on meeting acute care targets dominates attention within systems. A return to meaningful focus on mechanisms that are evidence-based and have an effect on the person's experience of care, outcomes that matter to them and that build on community strengths for good health and wellbeing is essential.

5. Conclusion

This report set out to identify and detail international examples that were designed to address fragmentation, or the great divide, between primary care and secondary care to improve care for patients with chronic and complex medical conditions.

The five innovative case studies presented are all different to each other in respect to the solutions implemented, the institutional contexts they sit in, their organisational arrangements, scope of the interventions and so on. None of them have however eliminated the fragmentation between primary and secondary care. They have not "filled the divide", and cultural, professional, institutional, organisational or budgetary differences continue to exist. The divide remains stubbornly impervious to change.

The systems in all our international cases do not make it easy or frictionless for primary care and secondary care services to coordinate. The move to greater specialization in health care during the 20th century across the world, driven largely by the medical profession, to address increasing complexity in health needs and innovation in treatment, has had the unintended consequence of leading to an experience of fragmentation for people and communities. This is felt most keenly by people living with chronic long-term conditions and those living with multiple conditions who spend much time coordinating their own care.

However, all five case studies are being successful in creating bridges across the great divide, by improving effective coordination. All of them have created programmes or initiatives to coordinate care without changing existing structures at the hospital or primary care level. Therefore, the interface itself does not change but bridges are created to standardise care pathways, facilitate referrals and transitions between care levels and avoid unnecessary hospital admissions. Overall, the main change is that they have put in place more agile and faster decision-making centred on the needs of a person. Because most cases target complex conditions, by the nature of the context, they had to coordinate multiple disciplines.

Each case study has developed its own mix of coordination mechanisms, with different emphasis on coordination types and different specific approaches and interventions used. But all case studies make use of all six mechanisms in their own mix. In fact, what it can be seen is that previous reliance merely on standardisation of work processes (all six cases) and of skills (ProPCC; CAREDOC; Alberta) is combined with direct supervision (e.g. CAREDOC; Alberta) and ways to standardise norms (e.g. Leuven Care ecosystem; Alberta; Keeping Well), as well as mechanisms of mutual adjustment (particularly strong in the case of ProPCC) The standardisation of outputs has had a limited application across these case studies, but the general perception is that its potential for enhancing coordination holds great hope.

These international cases demonstrate that creating the conditions for coordinated care at the primary and secondary care interface is complex, contested and takes significant investment of time and effort to establish and sustain. The UK countries are on the same journey as our international examples and need the same level of support and investment from policymakers, health and care providers, health and care professionals and their representative bodies, and communities to make the change required to nurture coordination across primary and secondary care.

6. Appendix

ProPCC

MECHANISMS OF COORDINATION

Mutual adjustment	Direct supervision	Standardisation			
		of work	of outputs	of skills	of norms
Informal communication by telephone between hospital and primary care ProPCC teams	Management by the ProPCC Programme team	Standardised clinical protocols and guidelines	The explicit goal is to avoid hospitalisation, exploring alternatives	Staff is trained on how to produce the shared advance care plan and to ensure the quality of this instrument	Stakeholder engagement, including patients and carers in the design phase to develop the shared purpose and priorities of the new model of care
Patients and families have a direct telephone number of the ProPCC team from primary care	Monitoring - regular checks on the completion and quality of PIICs by the Primary Care Service Directorate	Case-finding and detection of high-risk individuals through assessment of frailty and a case conference (CONS-1)	Case-finding and detection of high-risk individuals through assessment of frailty and a case conference (CONS-1)	Selection of practitioners with specific training and education on the care of older people and/or complex conditions	The advanced care plan is an instrument to forge a shared culture between all levels of care
Informal meetings, networking, and continued relationships among providers of different levels in the case conferences			Shared, collaborative, single point of entry to the programme through multidisciplinary decision-making in a case conference. (CONS-1)	The project promotes shared collaborative care by an interdisciplinary team	
Joint home visits			Multidisciplinary case management and shared decision-making in the case conferences (CONS-2, CONS-3)		
Role clarification and agreements with specialists care at the hospital and GPs at primary care			Shared, synchronized electronic care records from hospitals and primary care are accessible from all levels		
			A cross-sectoral individual care plan (PIIC) is a fundamental coordination mechanism		
			Discharge planning from admission		

CAREDOC Community Intervention Teams (CIT)

MECHANISMS OF COORDINATION

Mutual adjustment	Direct supervision	Standardisation			
		of work	of outputs	of skills	of norms
Meetings, networking, and continued relationships among providers of different levels	Joint Governance Committees: overall governance committee and clinical governance committee	Standardised referral pathways between community care, GPs and specialist care	The main objectives are to reduce unnecessary hospital admissions and to facilitate early hospital discharge to be cared for in the community instead.	Care planning with the perspectives and recommendations of multiple providers	The organisation of GPs in a cooperative model grants them a solid voice, respect, and value from specialised care practitioners.
Role clarification and agreements between different providers and practitioners	A central hub at CAREDOC head office proceeds to screen all referrals, including for potential duplication with other services	Community intervention teams work with hospitals and GPs to identify and refer patients for early discharge and to avoid hospital admission.		Community Intervention Teams include intravenous therapy, catheterization, medication reconciliation and hospital discharge support	As CAREDOC is a GP cooperative, the relationship forged between CITs and the GPs in the area is very strong.
	CAREDOC is accountable to HSE for its portfolio of work through the HSE Liaison Committee	Accepted patients are visited by the Community Intervention Team to develop a personalised care plan and prepare patients to return home		CAREDOC CIT nurses have the requisite skills to administer IVs as well as ample knowledge of Heart Failure to identify exacerbations	Continued relationship of interdisciplinary team
		Case management model with a multidisciplinary approach		Multimorbidity patients to proactively self-manage their health and wellbeing from home	
		Technology systems (CIT ICT) to promote information transfer and sharing with GP surgeries, acute hospitals, out of hours service and public health nursing facilities.			
		Technology enablers for care coordination - Multimorbidity patients to proactively self-manage their health and wellbeing from home supported by a digital platform and nurse-led remote assessment and triage (SMILE)			
		Role clarification and agreements within and between different level			

Leuven Care Ecosystem

MECHANISMS OF COORDINATION

Mutual adjustment	Direct supervision	Standardisation			
		of work	of outputs	of skills	of norms
A web of multidisciplinary networks work together to respond and adapt to the needs of the local community	ZZL Programme Management Team	Transmural teams design the guidelines and care pathways in different areas following international guidelines	Care trajectory contract regulates the interaction, behaviour and expected actions as a requisite to be reimbursed or receive financial incentives	Specialists provide advice to the GP and patients on clinical aspects of diabetes care	The organisation of GPs in a Primary Care Zone and the community networks grant Primary Care a solid voice and respect and value from specialised care
	INT coach works together with the operational management team	Case-finding and detection of high-risk individuals: identification and outreach of people with low compliance with diabetes treatment			Continued relationship of care providers through multidisciplinary networks for primary care level cooperation (integrated neighbourhood teams)
	Regional integrators include a back-office core team, a Steering Committee, and a jointly shared dashboard to monitor and adjust all activities	Integrated Neighbourhood Teams adapt the standardized protocols and guidelines to the local context and they are applied by individual care teams			Continued relationship of care providers through multidisciplinary networks for the cooperation of primary care with secondary and tertiary care levels (transmural teams)
		GP acts as the coordinator of the medical management in the Care Trajectories			Caring neighbourhoods connect informal and formal care and promote intersectoral collaboration between partners working in care, welfare and other domains
		Transmural teams work on the outflow of patients to intermediate care and seamless discharge guidance			Participation in the networks is on a volunteer basis, following the principles of shared interest to provide better care through integrated care
		INT care coaches engage with pro-active care coordination of people and team members			ZZL population health management approach promotes shared accountability among all levels with community-level data
		Care Trajectories facilitate communication through the IT system and allow “collegial consultation”			ZZL population health management approach promotes shared accountability among all levels with community-level data
		Population data supports adaptation and standardisation of the care pathways at the local level			

Alberta Diabetes pathway

MECHANISMS OF COORDINATION

Mutual adjustment	Direct supervision	Standardisation			
		of work	of outputs	of skills	of norms
Informal communication channels (telephone): Primary care teams can call a diabetes information and advice line (DIAL) run by a regional community diabetes team	Regional Diabetes Programme Management team (Alberta Health Services)	Standardised clinical protocols and guidelines of the implementation of Canadian Diabetes Association protocols adapted to the local context between primary and secondary care	Emphasis on measuring short-term transactional patient outcomes to demonstrate benefits eg specialist appointments, continuity of care	Primary care networks provide education and quality assurance support for work	The organisation of GPs in Primary Care Networks grants them a solid voice, respect, and value from specialised care practitioners
Role clarification and agreement: celebrate/utilise primary care whilst retaining complexity to specialists	Integrated Health care Data: Diabetes Infrastructure for Surveillance, Evaluation and Research (DISER) can enhance existing or planned datasets to increase their utility and value.	Case-finding and detection of high-risk individuals through a central disease registry to identify cases and are contacted either by the family physician or nurse		Self-management support: Educational modules to patients by trained primary care nurses.	Primary care has become more celebrated and there is emerging work on social determinants of health and social prescribing.
Informal meetings and networking	Routine data monitoring on control rates to show changes on guideline adherence, medication adherence, etc	Primary and specialist care referral pathways and processes are in place		Primary care nurses are trained to provide educational modules to patients.	Primary and secondary care discussions and buy-in
		A centralized triage system for referral to diabetes services: referrals received by the 24-hour central booking office are triaged, and urgent cases are identified			Initial work with the (to raise public awareness, re-focus on general practice, and manage expectations on accessing specialist care) and professionals.
		A shared electronic medical record system with the ability to rapidly communicate and electronically share information between primary and secondary care			Continued relationship of interdisciplinary team
		Multidisciplinary teams for managing diabetes: specialised nurses across placed PCN work with the family physicians			
		Involved a funding change model so that specialists became salaried rather than fee for service			

Keeping Well

MECHANISMS OF COORDINATION

Mutual adjustment	Direct supervision	Standardisation			
		of work	of outputs	of skills	of norms
Continued relationships among providers	Administrative data is shared across general practice and hospitals twice a year to support the monitoring and evaluation	Digitally enabled care pathways and decision-support tools (HealthPathways)	Quality measures as incentives (additional outcome-based payment)	In the Wellnet programme, GP-led care was integrated with trained and specialized chronic disease management	Through the joint commissioning experience, regular meetings and shared leadership for the programme
Joint visits: appointments with the general practice team are sometimes made jointly with the Geriatrician (out-reach)		Case finding and detection of high-risk individuals using hospital and/ or General Practice data.		Self-management support	
		Single point of entry for urgent case response - Aged Care Rapid Response Team			
		Care coordination and navigation across primary and secondary care			
		Linked data set and shared care records across primary and secondary care			
		Cross-sectoral shared care plans jointly by the GP and geriatrician			
		Technology systems to promote information transfer and sharing of care among settings: cdmNet, an electronic shared care planning platform			
		Technology enablers for care coordination: cdmNet includes 'GoShare', a health coaching and self-management platform and a mobile application called 'MediTracker,'			
		Role clarification and agreements within and between sectors			

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About the International Foundation for Integrated Care (IFIC)

The International Foundation for Integrated Care (IFIC) is a not-for-profit foundation dedicated to improving the lives of people and communities by advancing the science, knowledge, and adoption of integrated care around the world.

Our vision is that individuals, families, and communities benefit from person-centred, coordinated care and support that enables them to live healthy and fulfilling lives. We work to overcome the fragmentation in health and care systems by promoting models of care that are holistic, co-produced, continuous, coordinated, equitable, and sustainable.

As the leading international voice for integrated care, IFIC brings together researchers, health and care professionals, policymakers and people, families and communities. We provide a unique platform for collaboration, knowledge exchange, and innovation to drive system change.

IFIC delivers impact through:

- **The International Journal of Integrated Care (IJIC)** – our open-access, peer-reviewed publication sharing global evidence and best practice
- **International conferences and regional networks** – connecting people and ideas across sectors and borders
- **The Integrated Care Academy** – offering education and training to develop the workforce needed for transformation
- **Applied research and implementation support** – bridging policy and practice to build more effective and sustainable care systems
- **Knowledge platforms and solutions** – enabling shared learning and practical action across our global community

IFIC is recognised for its excellence, transparency, collaborative partnerships, and commitment to open access and continuous quality improvement.

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