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

PDTA (Italy)
Case Study Report

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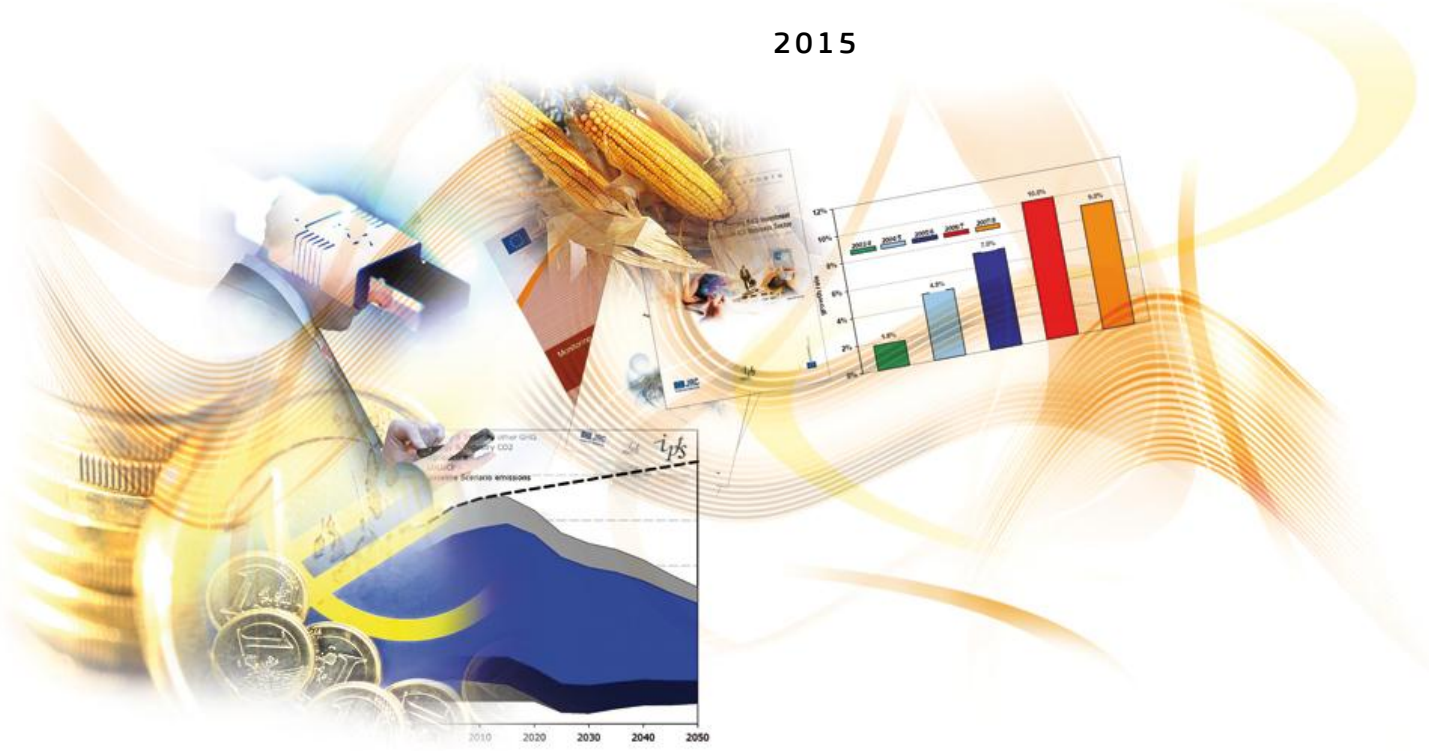

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Abstract
Percorsi Diagnostico e Terapeutici Assistenziali (PDTA, in English "Assisted Diagnostic and Therapeutic Pathways") is a patient-centric Integrated Care service organised by the Brescia Health Care Unit in Brescia Province (Italy). Brescia is the largest province of the Lombardy region and is second in terms of number of inhabitants after the province of Milan with 1.25 million inhabitants in 2013. The PDTA case started about 15 years ago as an initiative of a local health unit, which developed the PDTA approach with the support of the local GPs' Unions and the local Associations of Health Care Specialists. The PDTA case addresses patients with complex illnesses, as well as vulnerable subgroups (e.g. persons that suffer for dementia/Alzheimer's).
In order to exemplify and deepen the analysis of the case study, we have specifically studied the PDTA case applied to dementia/Alzheimer patients who represent 5% of the Brescia province population of the age group 64 and older (about 15,000 individuals). Currently, the PDTA case is providing services to 50% of the people suffering from dementia.

Acknowledgments

The authors wish to thank and acknowledge the following experts for their valuable comments and collaboration during the fieldwork process: Dr. Fausta Podavitte, Prof. Alessandro Padovani, Dr. Angelo Rossi and Dr. Erminio Tabaglio.

Preface

The Strategic Intelligence Monitor on Personal Health Systems (SIMPHS) research started in 2009 with the analysis of the market for Remote Patient Monitoring and Treatment (RMT) within Personal Health Systems (PHS). This approach was complemented in a second phase (SIMPHS2) with the analysis of the demand side, focusing on needs, demands and experiences made with PHS by healthcare producing units (e.g. hospitals, primary care centres), healthcare professionals, healthcare authorities and patients amongst others.

Building on the lessons learnt from SIMPHS2 as well as on the European Innovation Partnership on Active and Healthy Ageing initiative, SIMPHS3 aims to explore the factors that lead to successful deployment of integrated care and independent living, and define best operational practices and guidelines for further deployment in Europe. This case study report is one of a series of case studies developed to achieve these objectives.

The outcomes of SIMPHS2 are presented in a series of public reports discussing the role of governance, innovation and impact assessment in enabling integrated care deployment. In addition, through the qualitative analysis of 27 Telehealth, Telecare and Integrated Care projects implemented across 20 regions in eight European countries investigated in SIMPHS2, eight facilitators have been identified, based on Suter's ten key principles for successful health systems integration.

The eight main facilitators identified among these as necessary for successful deployment and adoption of telehealth, telecare and integrated care in European regions are:

- Reorganisation of services
- Patient focus
- Governance mechanisms
- Interoperable information systems
- Policy commitment,
- Engaged professionals
- National investments and funding programmes, and
- Incentives and financing.

These eight facilitators have guided the analysis of the cases studied in SIMPHS3 and a graphical representation with arrows whose length represents the relative importance of each facilitator is presented in each case study.

In addition to the above facilitators analysed in each case report, a specific section is dedicated to the analysis of care integration. It should be noted that the definition of vertical and horizontal integration used in this research is taken from the scientific literature in the field of integrated care[1] and differs from the one mentioned in the European Innovation Partnership on Active and Healthy Ageing Strategic Implementation Plan.[2] We define horizontal integration as the situation where similar organisations/units at the same level join together (e.g. two hospitals) and vertical integration as the combination of different organizations/units at different level (e.g. hospital, primary care and social care).

[1] Kodner, D. (2009). All together now A conceptual Exploration of Integrated Care.

[2] http://ec.europa.eu/research/innovation-union/pdf/active-healthy-ageing/steering-group/operational_plan.pdf (page 27).

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Case outlook

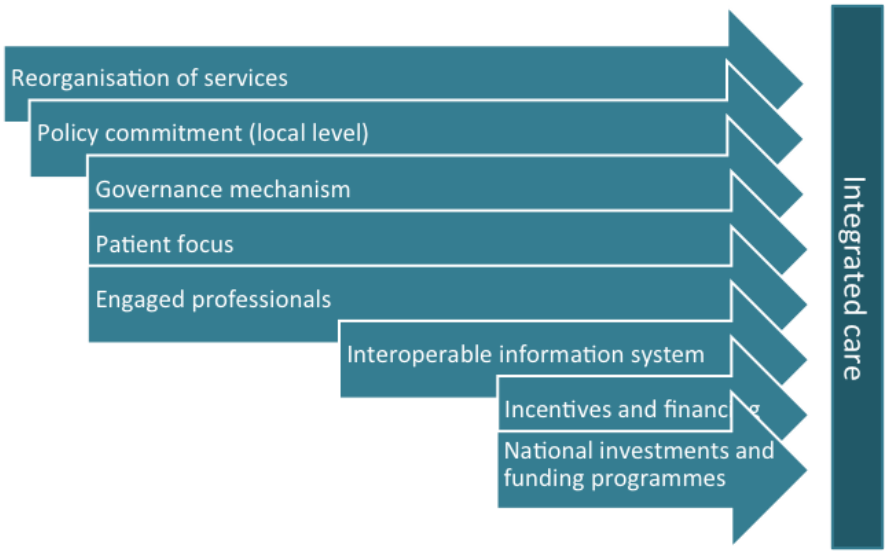
Percorsi Diagnostico e Terapeutici Assistenziali (PDTA, in English "Assisted Diagnostic and Therapeutic Pathways") is a patient-centred Integrated Care service organised by the Brescia Health Care Unit in Brescia Province (Italy). Brescia is the largest province in the Lombardy region and has the second largest number of inhabitants (1.25 million inhabitants in 2013) after the province of Milan. The PDTA service started about 15 years ago as an initiative of a local health unit, which developed the PDTA approach with the support of the local GPs' Unions and the local Associations of Health Care Specialists. The PDTA service addresses patients with complex illnesses, as well as vulnerable subgroups (e.g. persons that suffer for dementia/Alzheimer's).

In order to deepen the analysis of the PDTA case study, we looked specifically at its work with dementia/Alzheimer patients, who represent 5% of the Brescia province population of the age group 64 and older (about 15,000 individuals). Currently, the PDTA case provides services to 50% of the people suffering from dementia. In order to illustrate this case, we started with an extensive literature review that enabled us to identify the key actors involved in the initiative. The most important ones, such as the local health unit managers, the local leaders of GP's Unions, specialist health care representatives, were interviewed.

The PDTA case focuses on "home care management" and health and social services integration. In this context, the local health unit, together with local GP Unions and the local Association of Health Specialists, has developed an integrated care approach based on a standardised diagnosis of disease and personalised therapeutic and pharmacological pathways continuously monitored by GPs. They are supported on a daily basis by a network of health and social service providers distributed across the whole Brescia province. Although not supported by counterfactual evidence, recent impact evaluation conducted by local health units seems to confirm that the PDTA case provides important positive impacts both in terms of cost savings in health care processes and improvement of quality of diagnosis and treatments for patients.

Key facilitators of the case are: the strong commitment and common shared vision of all the actors involved; the existence of an excellent network of health and social care service providers which assign patients according to the personalised care pathway developed by GPs together with the local health unit's multidisciplinary team; the adoption of standardised and agreed working instruments by the GPs and health care specialists for diagnosis and treatment of the pathologies as considered by the PDTA case. Barriers to the diffusion of PDTA case that could also hinder the transferability of the initiative are: lack of a legal framework covering liability issues; lack of incentives in the implementation of the PDTA approach; and the increase in workload for health care professionals due to the lack of an interoperable information system which could support cooperation among the organisations involved in the service provision.

The following figure summarises the main facilitators of the PDTA case.


Reorganisation of services
Policy commitment (local level)
Governance mechanism
Patient focus
Engaged professionals
Interoperable information system
Incentives and financ
National investments and funding programmes
Integrated care

1 Background

1.1 Italian social and health care services

The Italian healthcare system offers universal access to a uniform level of care throughout Italy, as established through the Servizio Sanitario Nazionale (Italian National Health Service, INHS) in 1978. The central government controls the distribution of tax revenue for publicly-financed health care (INHS) and defines a national minimum statutory benefits package to be offered to all residents in every region - the "essential levels of care" (livelli essenziali di assistenza, or LEAs). Health care is financed primarily through a corporate tax pooled nationally and allocated back to the regions, typically the source region. There are large interregional gaps in the corporate tax base, leading to financing inequalities, and a fixed proportion of national value-added tax (VAT) revenue is collected by the central government and redistributed to regions unable to raise sufficient resources. Universal access to a uniform level of care is compromised by considerable variations in terms of coverage and service quality across regions in the North and South. The system provides a full spectrum of services, ranging from visits to GPs, specialised in-patient treatments, post-operative rehabilitation to ambulatory care and outpatient treatment. Drugs and medicines are largely covered by the INHS. A decisive change of the Health Care System took place when a major reform of the Constitution (Constitutional Law No. 3 of 18 October 2001) altered the roles and responsibilities of the State and the Regions. It provides that national authorities must ensure that general principles and objectives of healthcare are met, and that they retain the responsibility to define the basic benefits package to be uniformly-provided throughout the country (LEA). The regional authorities, on the other hand, retain considerable powers to legislate on a regional basis and allocate funding. Both national and regional authorities enact major policy decisions in inter-institutional "State-Regions Conferences", in which representatives from both authorities participate to deliberate on relevant issues.

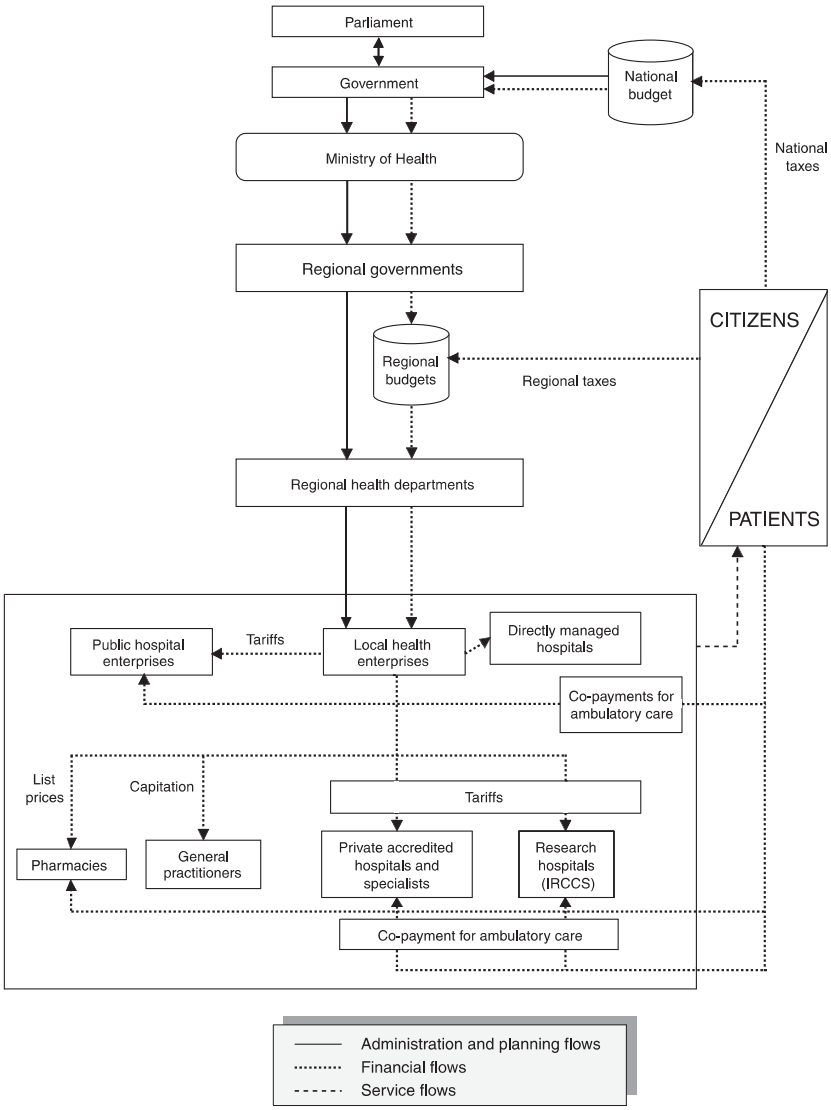
IHHS is organised on three levels: national, regional and local. At national level the Ministry of Health is the central body of the INHS in charge of coordination of the services covering human health, occupational health and safety, and food hygiene and safety. The Ministry has the authority to pass laws concurrently with the Regions, and it has regulatory authority over the Regions with regard to safeguarding health, and to occupational health and safety, regulation of the professions, nutrition and scientific research. Agreements between the State and the Regions establish the financial resources for a three-year period and the essential levels of care.

At regional level, according to national laws and general indications of the Ministry of Health, there are 19 regions and two autonomous provinces. These have responsibility for the organisation and delivery of health services in their areas as regards health education and promotion and disease prevention and care.

At local level, the health system is organised in Local Health Units (Aziende Sanitarie Locali, ASL), which are bodies with public juridical status that operate autonomously with regard to organisation, administration, management of assets, accounts, management and technology. Medical care and services are provided within each of these areas by public or accredited private hospitals and health centres. The ASL territorial facilities are organised in Districts. The Human Health Districts provide the following services: health education; information and advice to help residents make informed choices; primary health care; home health care; health certificates; prevention and control of infectious diseases; hygiene in

confined environments; food hygiene; protection of mother's and child's; and health assessment of interventions for the disabled. In this regard, hospitals provide all clinical care within their settings, including day-care medicine and surgery and ambulatory services, while the ASL are responsible for the health status of the population living in their areas. ASLs are also responsible for investigating the population's health needs and assessing the most common risk factors for acute and chronic diseases in the area; planning the health services required to respond to the population's health demands; paying the hospitals and other local authorities for the services they provide; and evaluating the effectiveness, safety and cost-benefit ratios of the health services provided according to standards of quality.

Figure 1: Overview of the Italian health care system



Note: IRCCS: National Institutes for Scientific Research.

Source: Scalzo et al. (2009)

Social care is delivered at a local level. Every Municipality can opt for direct provision or it can devolve services to an external market provider. The Italian social service came under particular government scrutiny to improve their levels of efficiency and effectiveness resulting in Law n8328/2000 and decree-law n8207/2001. These laws defined a new

institutional setting for social care organisations and also created a new institutional actor, the ASP, to improve the way social services were provided. The ASP was intended to be a more efficient and flexible type of organisation where professionals could achieve their potential, by adopting private management styles. Most of the social care in several Italian Regions is now provided through ASPs, which are autonomous entities normally owned by the Municipalities.

1.2 Brescia province

The Brescia province has a territory of about 4,800 km^2 and a population of 1.25 million habitants with a density of 263 habitants per km^2. It is the largest province of the Lombardy Region and the second most populated (after the province of Milan). The Brescia province has an annual GDP of more than €38 billion (11% of the annual GDP of the whole Lombardy region) with a GDP per capita of €30,200. The average age of the population of Brescia and its province is about 42 years old (Scarcella, et al., 2010) with 20% of individuals above 64 years old. This figure increases at a rate of 2.5% per year, against less than 2% for other age groups. Therefore, in Brescia and its province, the ageing of the population is an important and growing phenomenon, in line with the rest of Italy and above the EU 28 average with a percentage of over 64 year olds of 17.5%. The following table summarises the general information about Brescia and its regional health system:

Table 1: General information about Brescia

Country	**Italy**
Territory	Brescia province
Geographical coverage km^2	4,800
Inhabitants per km^2	7,263
Number of inhabitants (2012)	1,250,000
Life expectancy at birth years	79.4 males – 84.5 females
Regional GDP (2012) billion €	38
Regional GDP per inhabitant (2012) €/inhabitants	30,200
General Practitioners /1.000 inhabitants (2010)	0.65
Specialists /1.000 inhabitants (2010)	2.95
Regional Budget for Health services management (2013) billion €	2.3
Health care professionals / 100.000 inhabitants	350
Regional health care budget € per inhabitants (2013)	1,800
Hospital beds (2012)	6,495
Hospital beds/1.000 habitants (2012)	5.16

The Brescia province is located in the Lombardy Region. This region has developed a health service that guarantees care for all native and foreign residents through a wide range of services including general and paediatric care, hospital and health centre treatment, home care and pharmaceuticals. The Lombardy Region allows people to choose the hospital they prefer for treatment. It also confers full equality of rights and duties on both public and accredited private establishments, which must possess specific structural, technical and organisational requisites and mechanisms for the control of the quality system. Since 2003, the Lombardy Region has progressively integrated the financial resources to fund home care, grouping health and social care within the same budget. Thus, Local Health Units (ASL) and accredited – public and/or private - organisations interested in providing social

services to the elderly have clear incentives to collaborate to provide integrated home care (Assistenza Domiciliare Integrata, ADI).

At local level, the health system in the Brescia province is organised in one Local Health Unit (ASL) covering 12 health districts. The ASL is in charge of the programming, monitoring and evaluation of health care while health districts are responsible for the operational activities and the provision of services to patients. On the other hand, the social care services network is composed of 86 Assistance Residential Structures (ARS) with about 6,000 beds, i.e. about 24 bed places for every 1,000 habitants above 64 years old; 4 rehabilitation entities with about 177 beds and 51 Integrated Daily Centres (IDS) with a hosting capability of about 1,000 individuals/day.

1.3 PDTA case

The starting point of the "Percorsi Diagnostici Terapeutici Assistenziali" Case[3] study (henceforth PDTA case) was the CRONOS project, launched in 2000 by the Italian Health Ministry (ASL-BS, 2011). In this project, all Italian provinces recognised the Alzheimer's Evaluation Units (AEUs) as the organisations in charge of the definition of the diagnostic and therapeutic pathways for the targeted population. This project aimed to personalise the diagnoses and care pathways for patients suffering from Alzheimer's, according to their needs. It allowed them continuous interaction with the GPs, thus guaranteeing continuity of care, and the more appropriate pharmacological treatments. The regions did not achieve this aim equally: currently 25% of the UVAs are open only one day a week and for about 7% of them there is only one specialised doctor.

Nevertheless, based on this initiative and the favourable legal and organisational context provided by the Regional Health Government of the Lombardy Region, the Brescia Local Health Unit in close collaboration with the Geriatric Research Group[4] started a process of integration between the different tiers of care, including social care and home care.

The PDTA case is a health care initiative promoted by the Brescia Local Health Unit. Its aim is to integrate knowledge and services relating to health and social care processes mainly for the elderly, their families and caregivers. The target population comprises patients with chronic diseases, and in particular, the ageing population suffering from cognitive impairments and related co-morbidities. The key objective of the PDTA initiative is to increase the possibility for (mainly) patients with chronic diseases to stay at home as long as possible, without compromising the family context and existing system of relations. This is made possible through the definition of highly personalised care pathways for each patient, the implementation of which is facilitated through a network of care centres, recognised by the Brescia Local Health Unit and fully integrated within both the geriatric hospital units of the Brescia territory and the home care services provided by caregivers and third parties (e.g. NGOs, cooperatives, third sector associations etc.). The PDTA case is therefore based on three main elements: a network of services; a permanent training process and an assisted care pathway.

[3] This could be translated as Diagnostic Therapeutic Care Pathways

[4] Geriatric Research Group (GRG, http://www.grg-bs.it/home/index.php). The GRG is a NGO recognised by the Italian Ministry of University and Research, aimed at developing studies and applied research on epidemiological, clinical and socio-assisted issues related to the elderly. Since the beginning of its constitution, the GRG has been actively involved in all the initiatives conducted on the ageing population in the Brescia province.

The **network of services** comprises the Integrated Home Care Assistance Services – IHCAS - ("Servizi di Assistenza Domiciliare Integrata" – ADI); the Integrated Daily Services in specialised centres – IDSC – ("Centri Diurni Integrati" – CDI) and the permanent health care services in Assisted Residential Centres – ARC – ("Residenze Sanitario-Assistenziali" – RSA). These services are fully integrated with the geriatric hospital units located in the Brescia territory, which elderly can access according to specific typologies of disease and degree of severity.

The **permanent training process** organised by the Brescia Local Health Unit aims to encourage GPs operating in the Brescia territory to adopt the Assisted Care Pathway process in their daily practice. This training also targets non-professional caregivers and patient's families to help them provide the most adequate home care assistance in accordance with the degree of severity of the disease.

The **Assisted Care Pathway (ACP)** process aims to define and periodically update the personalised therapeutic and pharmacologic treatment of a given patient, as well as the type of assistance to be provided by the network of services. The ACP consists of 10 steps. Steps 1, 2 and 3 are the responsibility of the GPs. They act as the gateways to the process itself, and are responsible for both the pre-diagnosis of the chronic disease and the prescription of an initial set of exams on which they base prescriptions to a more specialised visit at the Dedicated Specialised Territorial Surgery (DSTS) managed by the Geriatric hospital units of the Brescia territory.

In Step 4, the DSTS then provides a multidisciplinary examination of the patient and decides a personalised pharmacological treatment. It may also recommend that the patient undergo a further visit to one the Continuous Multidimensional Assistance Units (CMAU) of the Brescia Health Unit. The aim of the CMAU visit (Step 5) is to decide upon the most adequate care support that could be provided by the network of services, described in the previous bullet points. This decision is made according to the patient's chronic disease characteristics, the family situation and the economic and practical possibility of the family to keep the patient at home.

After the initial prescription of the pharmacological treatments (Step 6), the patient remains under observation by the DSTS for about a month in order to assess possible side effects of the prescribed drugs. After 3 months of treatment (step 7), the DSTS defines a personalised Therapeutic and Pharmacological Plan (PTPP) that is communicated to both the GP and the CMAU in charge of the patient during the PTPP implementation. Finally, every 6 months (Steps 8, 9 and 10), the GP and the CMAU visit the patient, assess the progress of the possible side effects of the prescribed PTPP and communicate the results to DSTS, which can decide to modify the initial PTPP. The following table summarises the full process and actors involved.

Table 2: ACP process and the actors involved

Actors / Activities	GP	DSTS	CMAU
1) Pre-diagnosis is done by the GPs based on a standardised questionnaire prepared by the Brescia Health Unit according to the specific pathology under examination.[5] During the pre-screening the CMAU can also assess: **a) Patients' needs: degree of loneliness; lack of clear family/caregiver references; degree of worsening of the clinical and/or social framework; terminal phase of the disease.** **b) Familiars/caregivers: degree of readiness of the care instruments; degree of difficulties or lack of capabilities in managing the patient's psychiatric-behavioural problems;** **c) Home environment: degree of need to adapt the environment to the patient's needs (architectonic barrier removal; dangerous element removal, etc.).**	X		X
2) Prescription of standard exams	X		
3) Evaluation of the exams and prescription of the "multidisciplinary visit" in the Dedicated Specialised Territorial Surgery (DSTS, "Ambulatorio Specialistico Territoriale Dedicato – ASTD)	X		
4) First specialised diagnostic: within 1 month from the GP referral the patient undergoes a multidisciplinary examination to: confirm the GP's diagnosis; define the pharmacological treatment; provide the drugs for the first 4 months; make a decision about a possible specialised visit to the Continuous Multidimensional Assistance Unit[6] (CMAU or "Unità di Continuità Assistenziale Multidimensionale") and additional more complex exams		X	
5) CMAU visit to decide on the most adequate support to be provided by the network of services according to the patient's chronic disease characteristics, family situation, economic resources and how practical it would be for the family to keep the patient at home			X
6) Evaluation of side effects of the pharmacological treatment (1 month)		X	
7) Evaluation of the effectiveness and of possible side effects of the pharmacological treatment; referral sent to GP; definition of a Personalised Therapeutic and Pharmacological Plan (PTPP) - 3 months		X	
8) GP and CMAU visit the patient and assess the progress on the basis of the prescribed PTPP; communication of the results to DSTS - every 6 months	X		X
9) Assessment of the effectiveness of the PTPP and of possible side effects of the pharmacological treatment; new PTPP, communication results to GP - Every 6 months.		X	
10) Every 6 months. Drug prescription and monitoring of the psycho-physical and clinical condition of the patient in collaboration with CMAU	X		X

Source: Authors' elaboration adapted from BS-ASL (2013)

Based on the network of services, the permanent training process and the assisted care pathway, the PDTA approach has been implemented in three specific areas: dementia patient health care management; care management of patients suffering from multi-morbidity and home care.

[5] In the case of patients suffering from cognitive disease/Alzheimer's it is a 13-items questionnaire that eventually can be supported by a Mini-Mental-State Examination (MMSE) questionnaire if the GP thinks it is necessary (see both questionnaires in BS-ASL, 2013).

[6] There are 6 CMAU, one per Territorial District and all of them belong to the Brescia Local Health Unit. Each of them is composed by a fixed team including: the District doctor; a nurse; a social worker and an "on demand" team constituted by: physiotherapist; gynaecologist; geriatrician; physiatrist and other specialists that are paid by the Health Unit on the basis of the services provided.

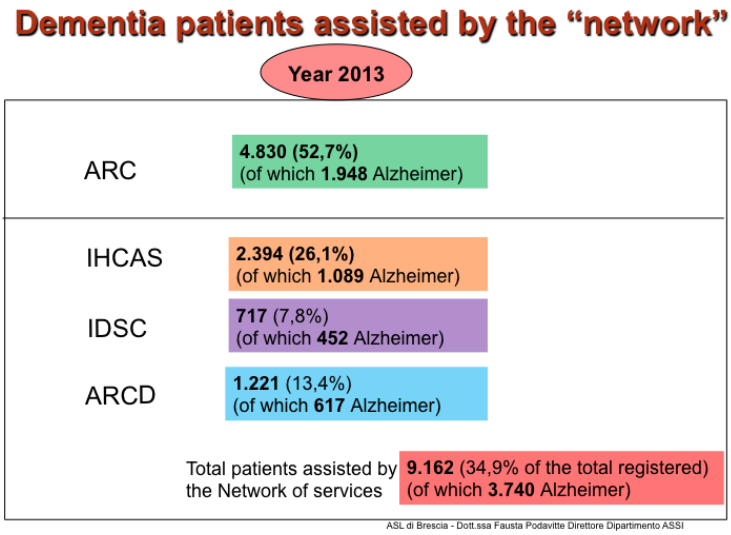
Dementia patient health care management started three years ago and aims to support families and non-professional care givers with a more personalised and comprehensive care. The main objective of this support is to enable the patient to stay home as long as possible without compromising the family context and the psychological condition of the family members. In order to diffuse the specific ACP process among GPs operating on the Brescia territory (more than 800 GPs), an extensive training campaign in which more than 500 GPs participated was organised to guide them through this approach. At the same time, several training courses were organised for non-professional caregivers and patients' families, to provide guidance on the most adequate home care assistance that can be provided to the patient without the help of non-professional operators. This intervention has also pushed the establishment of a wide network of Integrated Daily Services organised in Centres (IDSC) with specialised personnel for caring for patients with dementia. These centres host the patients during the day (8 a.m. - 5 p.m.), operate in strict collaboration with the patients and their families and provide a periodic monitoring of the status of each patient. They further give direct and continuous support to families, non-professional carers and caregivers in relation to the health and cognitive status of the patient, as well as guidance on how to assist the patient at home.

Care management of patients affected by multi-morbidity, i.e. patients suffering from more than one disease who can stay at home but require continuity of care and continuous assistance of their relatives, non-professionals carers or caregivers. Integrated care is provided by multidisciplinary teams of GPs, specialists and social care professionals who periodically monitor the patients' co-morbidity conditions and define personalised and integrated care pathways. These multidisciplinary teams also define an integrated support plan in accordance with the psychological and physical needs of the family members, the non-professional carers or the caregivers for assisting the patient.

Home care. The PDTA approach is applied to all the patients with disabilities arising from certain diseases (including rare diseases), and whose health condition allows them to stay at home. In all these cases, the multidisciplinary teams and the network of support organisations established in the territory of Brescia act in an integrated manner. They support family members, non-professionals carers and caregivers by reducing the psychological and practical effects of caring for patients for a long period of their lives.

For illustrative purposes and to deepen the assessment of the case study, we have focused our analysis on the first example of the application of the PDTA approach, namely "dementia patient health care management". Dementia is an important phenomenon among older adults (age 75+) in the Brescia province, representing about 1.2% of the overall population, and about 5% of the population above 65 years old, which increased by ca. 19% between 2008 and 2011. The number of registered dementia patients increased from 12,650 (of which 3,950 had Alzheimer's) in 2008 to about 15,000 cases (of which 6,800 have Alzheimer's) in 2011 and 26,000 in 2014, representing more than double the ones registered in 2008. Figure 2 depicts the number of dementia patients that are covered by the PDTA approach. Currently about 35% of the registered patients are being followed up: almost 26% receive home care assistance (IHCAS) and about 8% attend the Integrated Daily Centres specialised in dementia (IDSC).

Figure 2: Dementia patient



Legend: ARC – Assisted Residential Centres; IHCAS – Integrated Home Care Assistance Services; IDSC – Integrated Daily Specialised Centres; AECD – Assisted Residential Centres for Disables

Source: Podavitte, 2014

The application of the PDTA approach to the patients with dementia began in 2011. It aimed to move away from the simple provision of home care services, to a more personalised and integrated service for the patients, their families, non-professional cares and caregivers. The normative basis of this new approach is the Decree of the Lombardy Region Government n° 3971 of August 2012, which defines the legal characteristics of the new Home Care Assistance ("Assistenza Domiciliare Integrata – ADI") at a regional level.

2 Integrated care analysis

2.1 Dimensions of integration

Three pillars support the PDTA approach to dementia patient health care management: network of services, permanent training process and Assisted Care Pathway (ACP). The first pillar is about the re-organisation of providers and services; the second pillar covers how health and social care professionals are engaged in the process and the third pillar tackles the re-organisation of care. Network of services and training processes could be considered as a vertical axis, while ACP could be understood as the horizontal axis guiding patients and professionals through the continuum of care. These three major changes have made it possible for patients suffering from dementia, a specific vulnerable subgroup that could also suffer from other chronic conditions, to be covered by an integrated care approach. The main focus of the integrated care services is on cognitive impairment and inbound and outbound health and social services; home care management and chronic disease management.

One of the 10 steps described in Table 2 is the identification of dementia symptoms, which is carried out by GPs, who are gateways to the services offered. Specialists operating in the Dedicated Specialised Territorial Surgeries (DSTSs), organised inside the geriatric units of the hospitals, are in charge of the definition of a Personalised Therapeutic and Pharmacological Plan (PTPP) for each patient, validating the evidence collected by the GPs. Furthermore, the 6 Continuous Multidimensional Assistance Units (CMAUs) help GPs to

implement and monitor the PTPP, and also assess patients' needs so as to shape the PTPP when needed.

Each CMAUs is composed of a fixed team of professionals including: a GP; a specialist; a nurse and a social care worker, who are assisted on demand by: one physiotherapist; one psychologist; one geriatrician; one physiatrist and other specialists. As well as GPs and hospitals, this process involves the following providers: Integrated Home Care Assistance Services – IHCAS - ("Servizi di Assistenza Domiciliare Integrata" – ADI) ; the Integrated Daily Services in specialised Centres – IDSC ("Centri Diurni Integrati" – CDI) and the Permanent health care services in Assisted Residential Centres – ARC – ("Residenze Sanitario-Assistenziali" – RSA).

Therefore, the PDTA provides integrated care services through back office and support functions coordinated across all units involved (functional integration) and professionals within and across the organisations (professional integration) so as to provide a single/seamless process across time, place, and discipline (service/clinical integration). It is worth pointing out that this type of integration has pushed a shared vision, work values and culture among professionals and organisations involved in the process so that to some extent a normative integration has also been achieved. In addition, both the Local Health Unit in Brescia and the Lombardy region are aligned with a view to achieving a systemic integration at policy and organisational level.

To achieve the type of integration described above, the PDTA case has fostered an organisational, service delivery and clinical integration mainly through a vertical integration, which involves the combination of different organisations/units at different levels (General practice/Primary care – Specialists/Hospitals). However, we found very few cases of horizontal integration among similar organisations or units.[7] This lack of integration hinders the exchange of experiences in the execution of the ACP process among similar actors, which in turn prevents implementation of the ACP process with the same quality for every patient.

In conclusion, we can say that the ACP approach is well recognised by the majority of GPs in the Brescia Territory (about 550 out of 800 apply the ACP methodology on a voluntary basis) and there is close collaboration among GPs, CMAUs, Health Care Specialists of the DSTS and the network of health services of the territory. However, the level of integration of the health and social care services provided by the Local Health Unit in collaboration with the municipalities is still low due to the fact that there is not much exchange of information between the two sectors, neither during the diagnosis stage, nor in the provision of services. Two different political representatives chair the health services and social services, which have different organisational structures and budgets. It can therefore be concluded that PDTA has achieved a medium degree of integration especially in health services where communication, information-sharing and collaboration are facilitated through coordination based on ACP process. The level of integration between the health and social care services, however, can be seen as incomplete because of the limited

[7] One example is provided by the local representative of one of the two main GPs' Unions present on the Italian Territory whom we interviewed. He referred to the experience of the "Leno District (that is one of the 6 Districts in which the Brescia province is organised) where the strict cooperation amongst the GPs has allowed to create a local "Integrated Daily Centre" with housing capabilities and now the GPs of the District are exploring the possibility to join efforts and establish a Cooperative that would integrate their services both from an organisational and managerial point of view.

information flow between these two tiers of care and the difficulties encountered at institutional level.

2.2 Impacts

Stakeholders consulted commonly agreed that the key impacts of the PDTA case include:

- Reduction of the caregivers' burden.
- Improvement in terms of satisfaction with care as expressed by family members and caregivers.
- Enhanced quality of work by health and social care professionals.
- Improved quality of life for the patients and their families.
- Sustainability of health care system for health care organisations.

GPs and health care professionals interviewed further agreed on the following impacts:

- The number of hospitalisations was reduced.
- Patient satisfaction increased.
- Health care costs were reduced.

However, currently there is no evidence of a causal relationship between the PDTA's ACP approach and the above mentioned key impact indicators. This is mainly due to the predominant lack of evaluation culture in Italy as compared to other countries (e.g. the Anglo-Saxon countries), as well as the lack of availability of measurement data. Nevertheless, we can consider the impacts measured by means of a "*quasi natural experiment*[8]" recently conducted with 400 Italian GPs (out of whom 39 belonged to the Brescia Health Care Unit and had significant experience with the PDTA approach) responsible for providing assistance to a total of about 58,000 patients. The study provided the following evidence on the benefits of the PDTA case applied to patients with cognitive impairment:

[8] The 400 GPs were randomly selected albeit without any "matching" techniques. They were divided into two statistically comparable groups (361 GPs belonged to other Italian provinces and 39 GPS belonged to the Brescia Health Unit).

Table 3: Evidence of impacts of the PDTA case

Impact Indicator	GPs of Brescia Health Care Unit	Italian GPs
At least 1 daily visit to the patients under a PTPP	91% of the cases	60% of the cases
At least 1 control visit in the last two years	31.5% of the cases	n.a.
At least 1 specialised visit after the control visit	69% of the cases	n.a.
Examinations requested: • CBC • ABR • TSH • TAC	Compliancy with the PDTA case protocol: • 97.0% of the cases • 47.5% of the cases • 77.1% of the cases • 62.4% of the cases	Compliancy with PDTA case protocol: • 50.0% of the cases • 5.1% of the cases • 19.0% of the cases • 7.4% of the cases
Drug prescription: • "old" antipsychotics • "new" antipsychotics	• 6.6% of the cases • 3.8% of the cases	• 25.8% of the cases • 10.0% of the cases
Degree of adherences of the GP's diagnosis with the one of the specialist	69% of the cases	n.a.

Source: Authors' elaboration based on interviews and secondary sources

The results of the experiment show that the GPs of the Brescia Local Health Unit applying the PDTA approach to their patients perform better than colleagues of the other Italian territories.

In particular:

- There is an evident increase of efficiency in the time management of the visits to the patients following specific therapeutic and pharmacological pathways related to the PDTA case study: 91% of the patients of GPs belonging to the Brescia Health Unit have at least 1 daily visit against 60% of patients assisted by GPs in other Italian territories.
- GPs in the Brescia Health Unit comply with the PDTA case protocol[9] more often than GPs in other Italian territories. In addition, the diagnoses made by GPs working for the Brescia Health Unit are more likely to be confirmed by the health specialists. This can be regarded as evidence of a reduction of un-necessary visits to the specialists, with possible positive impacts on overall health care cost savings.
- There is clear evidence that GPs belonging to the Brescia Health Unit are much less likely to prescribe drugs like the "old" and "new" antipsychotics than GPs in other Italian territories.

The above impacts are most probably due to the PDTA's process standardisation efforts provided by the Brescia Health Health Unit. Evidently, this should also have a positive effect on the health cost savings in drug consumption.

[9] As discussed in the Chapter 2, it is important to note that the PDTA case protocol applied in Brescia is a standard protocol widely adopted by the international communities for diagnosis and treatments of the pathologies considered in the case study. Moreover the PDTA approach is now under adoption by the Lombardy Region and other Regions in Italy (see Transferability section).

2.3 Drivers and barriers

Integrated care has been on the Brescia Local Health Unit agenda for the past 15 years. This **local policy commitment** has been the main facilitator of the PDTA case. Since the CRONOS project, the Brescia Local Health Unit has acted as a catalyst for integrated care, coordinating and stimulating the efforts of the GPs and health care specialists in the design and implementation of the ACP process for several chronic diseases, including dementia. This policy commitment has created a set of common strategic, operational and management principles and shared them with the local health actors, the patients, their families, and carers. These principles guarantee:

- Clinical governance of the service.
- Continuity of care and assistance for the patients and their families.
- Single points of contact for the local access to services to simplify the diagnostic and therapeutic pathways for patients and their family members.
- Multidimensional evaluation of the patients' and families' needs for clear and fast answers and continuous monitoring of the patients' disease status.

The ACP process could be considered as an organisational innovation, which has facilitated the **reorganisation of services,** fostering cooperation between tiers of care, enabling the care continuum and allowing patients to access this continuum through multiple points. This process also includes clear task assignment for each of the actors involved in the ACP process and a clear definition of the interactions among them (such as shared pharmacological treatments and therapies between GPs, the DSTS health specialists and the CMAU multidimensional teams). This is made possible by the fact that there is a single and continuously updated IT system that contains data from both patients and service providers.

Furthermore, the ACP deployment puts the focus of the care process on **patients' and their families' needs**. This reorganisation implies close coordination among GPs, DSTSs and CMAUs, who agree on common standards and homogeneous quality of services.

At the same time, the Brescia Local Health Unit has organised and implemented a procedure for the certification of care service providers which operate on the territory of the Brescia province and which constitutes the "network" of service providers supporting the implementation of the ACP process. This **governance mechanism** promotes coordination across settings and levels of care, including a well-established process of patient data sharing among GPs, specialists in the DSTSs and CMAUs and the adoption of common and agreed working instruments for diagnosis.

Lastly, the Brescia Local Health Unit has provided continuous training actions targeted at GPs, the network of service providers, non-professional caregivers and patients' families. Thus, the Brescia Local Health Unit has **engaged professionals** as leading contributors to the creation of a shared culture of chronic disease management, fostering a common vision among the organisations and units in charge of the service. This has facilitated the success of the initiative.

However, **the lack of national investments and funding programmes** has hampered the potential for full deployment of the initiative. In some cases, coverage of patients' needs has been limited and the budget has been too small to cover the increase in workload for health care professionals. In addition to lack of resources, **services funding and incentives are not clearly aligned** so that an equitable distribution for different

services or levels of services is not guaranteed and there are no funding mechanisms promoting inter-professional teamwork.

Our research suggests that the barriers identified mainly reflect the lack of legal and strategic support to the implementation of the ACP process from both regional and national governments, in contrast with the local policy commitment.

2.4 Organisation, health professional and patients

As outlined in detail in the description of the PDTA case, the ACP process could be considered as the core organisational innovation. It aims to move from the simple provisioning of home care services to patients with dementia, to a more personalised and integrated service, not just for patients but also for their families and caregivers.

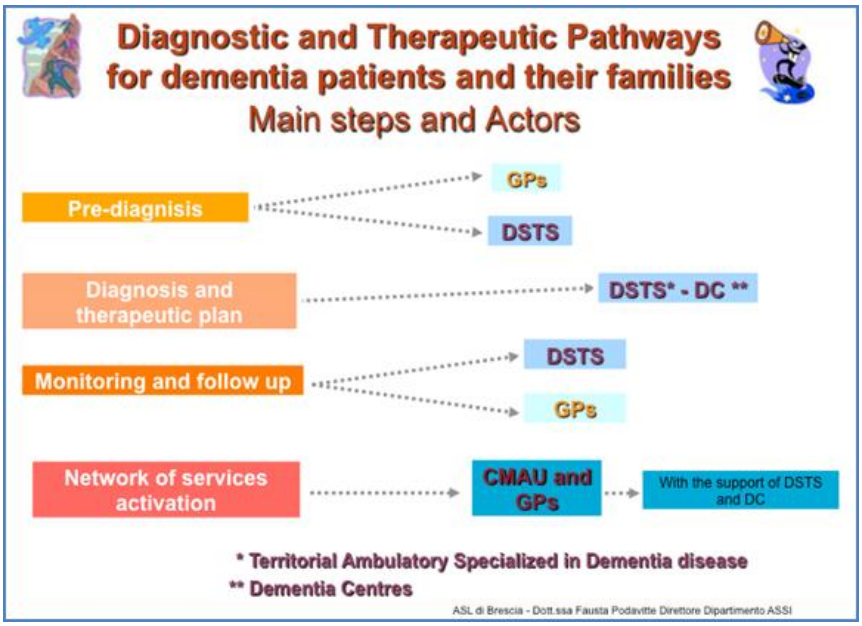
In order to implement this new vision for dementia care management, the Brescia Local Health Unit, supported by GP representatives and health care specialists, had to carry out two main phases of reorganisation. First, **the "network of services" specialised in dementia care management was established**. It was legally anchored in the Regional Decree of the Regional Government n. 9942 of 5 January 2009. This network is composed of organisations providing home care assistance in Brescia and its province, after previous accreditation by the Brescia Local Health Unit according to a specific evaluation procedure. These organisations could comprise: health organisations, ARCs, cooperatives, group practices, private organisations and/or NGOs. The key principles upon which the standards of services of these organisations are evaluated by the local Health Unit are (1) the capability to conduct multi-dimensional assessment of the progressive degeneration of the dementia disease and thus to give support to GPs, CMAUs and DSTSs in the revision of the PTPP and (2) the capability to provide multidisciplinary services to guarantee the continuity of assistance and care to both the patients and their families in all the issues related to dementia and the impacts that the disease can have in family contexts.

In this way the network of service providers guarantees full integration with the organisation of the ACP process described in Table 2, ensuring access to a care continuum with multiple point of access. Currently, the network is well established in the Brescia province and serves more than 9,000 dementia patients, out of the 26,000 who were registered in 2014.

Second**, the organisations in charge of dementia care** were established. They comprise 5 DSTS – Territorial Ambulatories Specialised on Dementia care (first level centres) and 5 CDs – Centres for Dementia Care (second level centre). They serve as preconditions for the establishment of the ACP process. They were set up in the CRONOS project, promoted by the Italian Health Ministry. In this project, all Italian provinces acknowledged the Alzheimer's Evaluation Units (AEUs) as the organisations in charge of the definition of the diagnostic and therapeutic pathways for the targeted population. As already discussed, most AEUs in 2000 were either closed or played a limited role in the treatment of Alzheimer's. Nevertheless, the Brescia Local Health Unit transformed the AEUs into what are now called DSTSs, which play an important and active role in the ACP process.

A significant change was implemented at a professional level in parallel with the new organisations that emerged from the PDTA deployment. The actors involved in the activation of the PDTA are presented in the following figure.

Figure 3: Actors involved in activation of the PDTA



Legend: GPs: General Practitioners; DSTS: territorial ambulatory specialised for dementia care; CMAU: Continuous Multidimensional Assistance Unit
Source: Podavitte (2012)

As mentioned in the description of the professional integration, each CMAUs has a fixed team of professionals including: a GP, a specialist; a nurse and a social care worker, who are assisted on demand by: one physiotherapist; one psychologist; one geriatrician; one physiatrist and other specialists. In addition to GPs and hospitals, this process involves the following providers: Integrated Home Care Assistance Services (IHCAS); the Integrated Daily Services in specialised Centres (IDSC) and the Permanent health care services in Assisted Residential Centres (ARC).

Finally, it is worth mentioning that the PDTA case puts emphasis not just on the patients but also on the context in which they live, especially their relatives and their formal and informal carers.

2.5 Information and Communication Technologies

The PDTA information system is based on ad hoc software developed for the Brescia Local Health Unit about 10 years ago and which has been in constant evolution ever since. The PDTA information system registers all patient referrals and monitors their diagnostic, therapeutic and pharmacological pathways, as well as their presence in the ARC and in the other public and/or private organisations within the network of service providers. The system is also used by the Local Health Unit for statistical and epidemiological purposes.

The PDTA information system is a stand-alone application that is not yet connected to the SISS (the Health Information System of Lombardy Region), meaning that the GPs who follow the PDTA approach have to duplicate their efforts. In particular, they have to register on paper all the diagnoses and treatments, which are requested by the PDTA methodology for their patients. These papers are then forwarded to the local health unit, after which an operator registers this information in the PDTA information system. At the same time, GPs are contractually obliged to register the same information on their own Electronic Health Record, and some administrative information (e.g. the medical prescription) on the SISS

application. This administrative and organisational burden certainly constitutes a barrier to the diffusion of the PDTA approach.

Moreover, currently no information is shared about the outcomes of the PDTA case. All statistics and outcomes of the case are managed and known by the Local Health Unit alone.

The lack of interoperability and duplication of efforts clearly hampers the full potential of the initiative and its impacts.

2.6 Governance

The Governance of the PDTA case could be considered as working on two levels: on the one hand the legal basis supporting the integration process within the Italian health system described in section 1.1; on the other hand, the clinical and services integration governance.

According to AGENAS (2011), the origin of the socio-sanitary networks and the PDTA lies in the re-organisation of the National Health System, which in recent years came to focus more on the local relationships between hospital and territory, rather than on managing the health practices at national-regional level. The most important factors in this regard were:

- Health changes due to the increase of chronic diseases that require long-term care.
- Functional issues related to Active Healthy Ageing (AHA) needs, where the individuals may become dependent for a longer period of time than in the past.
- Social contexts that require additional and continuous support to the elderly and their families from different sources and actors.

All these needs are better approached by a Local Health Unit, which constitutes a self-contained health environment and which, if operating in an integrated manner, can plan all the necessary health services for its population. From a similar perspective, the Local Health Unit is where health and social care can be effectively integrated. The legal basis for increasing the power of the health unit to provide integrated services in the territory and become a reference point for patients/citizens instead of the hospital are Law n°229/1999, Law 328/2000 on social services and Law of 14 February 2001 on "socio-sanitary" integration, which foresees the possibility to assess disabilities through:

- A multidisciplinary evaluation of cases.
- The definition of an individual plan for the assisted person.
- The identification of a "case manager".
- The establishment of an "assistance" pact with the family of the disabled person.

In addition to this law, the Regional Decree of the Regional Government n. 9942 of 5 January 2009 legally established a "network of services" specialised in dementia care management (see Section 2.4). Within this context, the Brescia Local Health Unit operates autonomously with regard to organisation, administration, management of assets, accounts, management and technology and is responsible for planning the health services required by the population, paying the hospitals and other local authorities for the services they provide, and evaluating the effectiveness, safety and cost-benefit ratios of the health services provided according to standards of quality.

At a clinical and services organisation level, the governance model is ruled by the ACP process. Since the very beginning of the ACP process development, the Brescia Local Health Unit played a central role in the governance of the PDTA. As already discussed in the previous chapters, it served as a promoter and catalyst in this case and is still the steering

organisation. However, the local GPs unions and the health care specialist representatives also played an active role in the design and the implementation of the care pathways. In particular, they contributed to the definition of the ACP process and to the specification of the tasks and assignment to the involved organisations. Furthermore, they participated in the standardisation of the pre-diagnosis and the exams to be conducted by the GPs at the beginning of the ACP process. To facilitate the governance of the ACP process in the case of dementia care, the Brescia Local Health Unit formed a committee composed of the Brescia Local Health Unit, the representative of GPs, the representative of the ARC, the relevant persons from the structure in charge of the dementia management constituting the "network of services" and the representative of the DSTSs. This committee could be considered as the main governance tool at a clinical and organisational level, bearing in mind the leading role of the Brescia Local Health Unit as a body in charge of contracts, payments and evaluation.

2.7 Organisational processes

The core component of the organisational process is the ACP steps defined in Table 2. As already discussed in the previous chapters, GPs are the gateway to the service in the organisational process that underpins dementia care management in the Brescia province. To this end, all GPs who participate, on a voluntary basis in the initiative, follow a standardised procedure as regards pre-screening of patients and for the prescription of the initial examinations. The pre-screening aims to understand patients' full contexts, e.g. their living conditions and how they are assisted. This is another important element of the process since it helps the DSTSs define the appropriate PTPP for each patient, whereas the CMAUs can provide the most suitable combination of home care and support services that the "network of service providers" should deliver.

Another important element of the ACP process is the diagnostic pathway, where all the dementia care actors are periodically involved in a revision of their PTPPs, in accordance with the information collected by the GPs and the different providers of the network of services. This information is gathered during the PTPP implementation period and relates to the evolutionary pathway of the disease and on possible changes in the family context and/or personals relationships inside the families as a consequence of the patient's disease. This step is fundamental for adjusting the care pathway to the registered changes, preventing unplanned hospitalisations and avoiding more dangerous consequences for the patients.

One of the facilitating mechanisms for the implementation of the ACP process is the follow-up procedure that the operators of the network of services have established with the patients and their relatives during the therapeutic pathways. Another is the continuous support provided by the network services operators during the development of the disease. From this perspective, the providers of the network of services act as a "secondary gateway" according to the severity of the disease, the presence of co-morbidity conditions or changes in the family context, which might require a revision of the PTPP for the patient, or could eventually entail an immediate re-hospitalisation. An enabling mechanism of the ACP process is the continuous support provided by the Brescia Health Unit to both the caregivers operating in the network of services and the patients' families. The Unit achieves this by organising ad-hoc training courses, in which both the GPs and the health care specialists' representatives participate. The following figure sketches the professionals, services and providers involved in the process.

Figure 4: PDTA service provisioning

Source: Authors' elaboration

2.8 Reimbursement model and economic flow

GPs and the other health care providers receive the standard reimbursement from the local health unit, while the organisations accredited for providing home care services sign a contract with the local health units based on a predefined budget, set in accordance with the agreed service provisioning. Although the GPs play a pivotal role in the development of the PDTA case, they are volunteers and no specific incentives are foreseen for them in the PDTA service provision. In contrast, the health care specialists operating in the DSTS units receive a fee for each visit that they have to perform following intervention from the local health unit. However, the fee is quite small and is currently being negotiated by the hospitals to which the specialists belong. The fee is included in the normal salary and does not affect the salary composition.

Therefore, all stakeholders consulted agreed that there is a "*lack of innovation in reimbursement models applied",* which is mainly due to a "*lack of a common outcome-oriented incentive scheme for the care managers and health care professionals involved*".

As discussed by Boffelly (2014), a new incentive scheme is currently under evaluation for integrated hospital and home care service provisioning, in terms of sharing the reimbursement/payments.[10] However, we found no evidence of the possible introduction of a new reimbursement scheme based on outcomes in the short and medium-term. In

[10] See Mechanic, R., (2014), "Post-Acute Care – The next frontier for controlling medicare spending". In *New England Medicine, 370;8. "….Hospitals and physicians participating in bundled-payment or shared-savings programs will need to establish meaningful partnerships with all types of post-acute care providers. Partnerships with SNFs are particularly important, since they account for about half of Medicare's post-acute care spending…".*

addition, stakeholders recognised the difficulties caused by the fact that costs of care and drugs vary from local unit to local unit.

Table 4 provides another example of how the reimbursement schemes are fragmented and not uniformly applied in Italy. As can be seen in the table, each local health unit applies different care cost policies and this introduces a further barrier to the diffusion of common health care practices.[11] As can be seen from the table each region/autonomous province has adopted different policies for the definition of the cost of the service. For example in the case of the provision of home assistance with nurses, they are in general included in the tariff of the services itself that the patients and their families have to pay according to the severity of the disease and their level of income. However, in some regions (such as Friuli Venezia Giulia, Campania and Marche) and the Autonomous Province of Bolzano, the Nurse' services are charged to the local health unit. The same goes for the provision of services by the hospital doctors and GPs, while the drug provisioning and the specialised visits are always charged to the Local Health Unit. These inequalities in the provision of the services registered on the Italian territory is certainly a barrier of the diffusion of the PDTA services across the Italian regions, as well as a significant constraint in the achievement of the same level of quality in the service provided.

Table 4: Costs attribution for Integrated Home Care Assistance in Italian Regions

Italia Regions	Nurses	Hospital doctors and GPs	Drugs	Specialized care
Piedmont	Included in the Tariff	Charged to the Health Care Unit (GPs services)	Charged to the Health Care Unit (direct provisioning)	Charged to the Health Care Unit
Valle d'Aosta	Included in the Tariff	Included in the Tariff	Charged to the Health Care Unit (direct provisioning)	Charged to the Health Care Unit
Lombardy	Included in the Tariff	Included in the Tariff	Included in the Tariff	Charged to the Health Care Unit
Bolzano autonomous province	Charged to the Health Care Unit	Charged to the Health Care Unit	Charged to the Health Care Unit	Charged to the Health Care Unit
Trento autonomous province	Included in the Tariff	Included in the Tariff	Charged to the Health Care Unit (direct provisioning)	Charged to the Health Care Unit
Veneto	Included in the Tariff	Included in the Tariff	Charged to the Health Care Unit	Charged to the Health Care Unit
Friuli Venezia Giulia	Charged to the Health Care Unit	Charged to the Health Care Unit	Charged to the Health Care Unit	Charged to the Health Care Unit
Emilia-Romagna	Included in the Tariff	Charged to the Health Care Unit	Charged to the Health Care Unit	Charged to the Health Care Unit
Liguria	Included in the Tariff	Included in the Tariff	Charged to the Health Care Unit (direct provisioning)	Charged to the Health Care Unit
Tuscany	Included in the Tariff	Charged to the Health Care Unit (GPs services)	Charged to the Health Care Unit (direct provisioning)	Charged to the Health Care Unit
Umbria	Charged to the Health Care Unit	Charged to the Health Care Unit	Charged to the Health Care Unit	Charged to the Health Care Unit
Marche	Direct Assistance: Charged to the Health Care Unit Indirect Assistance:	Direct Assistance: Charged to the Health Care Unit Indirect Assistance: Included in the Tariff	Charged to the Health Care Unit	Charged to the Health Care Unit

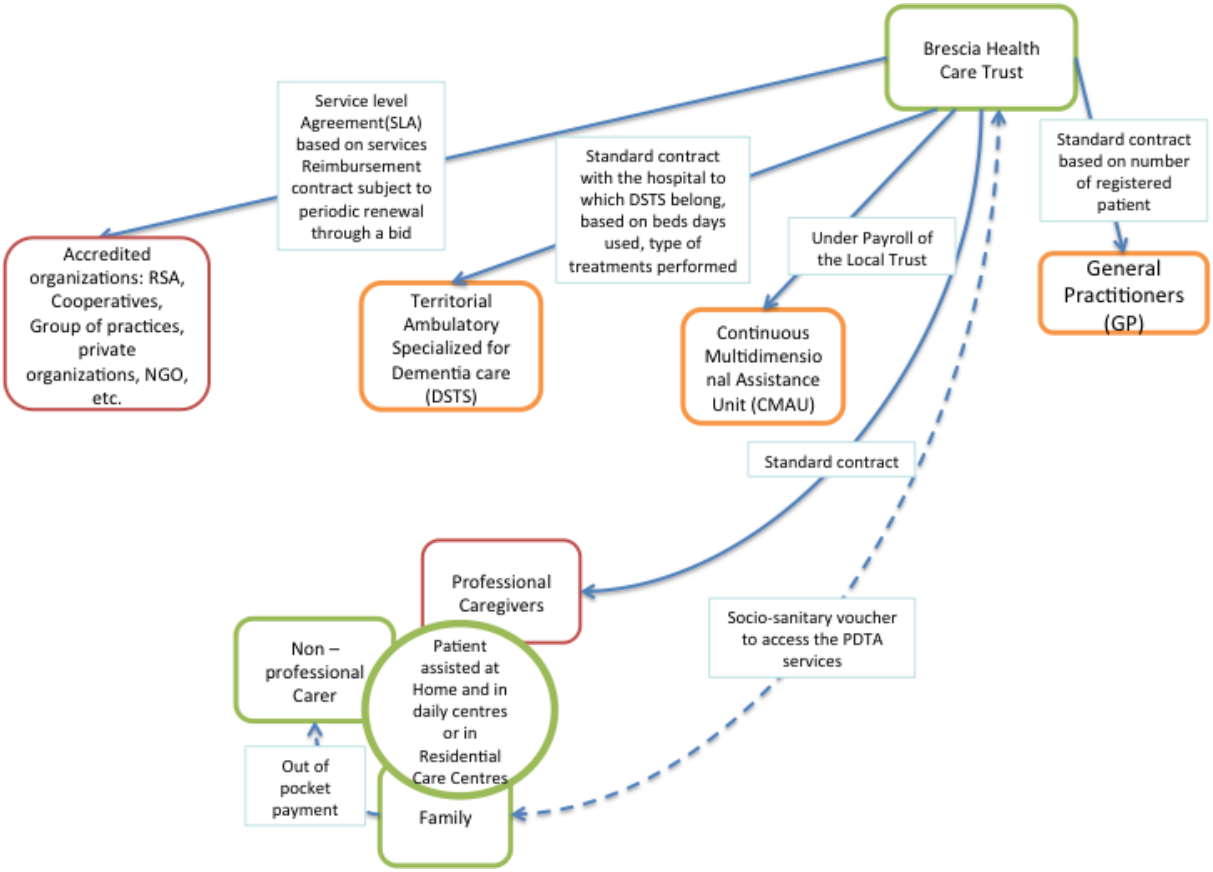
[11] On this issue see also SPARRA and TDP cases in Scotland (UK).

	Included in the Tariff			
Lazio	Included in the Tariff	Charged to the Health Care Unit (GPs services)	Charged to the Health Care Unit	Charged to the Health Care Unit
Campania	Charged to the Health Care Unit	Charged to the Health Care Unit	Charged to the Health Care Unit	Charged to the Health Care Unit
Puglia	Included in the Tariff	Included in the Tariff with the exclusion of GPs costs that are charged on the Health Care Unit	Charged to the Health Care Unit (direct provisioning)	Charged to the Health Care Unit (direct provisioning)
Calabria	Included in the Tariff	Included in the Tariff	Charged to the Health Care Unit	Charged to the Health Care Unit (direct provisioning)
Sicily	Included in the Tariff	Included in the Tariff	Charged to the Health Care Unit	Included in the Tariff?
Sardinia	Included in the Tariff	Included in the Tariff	Charged to the Health Care Unit	Basic care are included in the tariff, the other are charged on Health Care Unit

Source: Authors' elaboration based on Carabellese, 2011

The following figure depicts the economic flow of the PDTA case. The pre-diagnosis is free of charge for all the patients and family members who request it, as recommended in a prescription from a GP or a health care specialist. If the patient and his/her family want to carry out the pre-screening examination process without a recommendation from a GP or a health care specialist, the examination cost is borne by the patient and his/her family. The costs of the service and the implementation of the PDTA for every patient depend on the capability (economic and practical) of the family to take care of the patient. The condition of the patients and the ability of their families to afford the care are assessed periodically. The health unit can then decide to reduce or increase the economic support to the family and the patients. It is worth mentioning that, according to the stakeholders consulted, the health and social care Departments do not follow the same rules when deciding whether patients can be exempt from service costs.

Figure 5: Economic flows of PDTA case



Source: Authors' elaboration

Those patients who follow a diagnostic, therapeutic and pharmacologic pathway must pay a socio-sanitary voucher. It is a virtual allowance that allows them to access socio-sanitary services provided by professional caregivers accredited by the local health unit. The patient selected for the service provision and his family can be exempted from payment in accordance with specific income and health status rules defined by the local unit.

3 Transferability

The transferability of the PDTA case to other Italian regions does not require significant investment in terms of organisational effort or technological infrastructure. As a matter of fact, the ACP process as described in Table 2 has already been adopted in other Italian provinces, and applying it to the whole of the Lombardy region is being evaluated. There is already a preliminary legal basis for the implementation of the services across Italy, though the stakeholders consulted recognised that this was quite limited and would not allow full implementation of the integrated care process.

The main obstacle to effective transferability of the services to other Italian regions is the need for a favourable cultural context, as is the case in the Brescia province. There must also be a strong commitment from the Local Health Unit, which must function as a promoter and catalyst for the initiative among local GPs unions and the health care specialists of geriatric units at local hospitals.

Transferring the PDTA approach to other EU28 contexts would probably be far more difficult, given the different health care organisation systems. These would require a certain degree of adaptation, the costs of which could be regarded as a barrier to the diffusion of the PDTA case.

Lastly, the stakeholders consulted agreed that the critical success factors for transferring the PDTA approach to other contexts also include favourable legal and cultural conditions. Another critical success factor is the local presence of a common strategic and operational management of the health and socio-sanitary systems that would guarantee:

- Clinical governance of the service.
- Continuity of care and assistance to the patients and their families.
- Single points of contact for patients and their families to access local services to simplify their diagnostic and therapeutic pathways.
- Multidimensional evaluation of patients' and families' needs to provide clear and fast answers, and continuous monitoring of patients' disease status.
- Integration of health and social care services provisioning.

4 Conclusions

The PDTA case of Health Care Unit of the Brescia province in Italy is a patient-centric integrated care service targeting patients with specific diseases such as cognitive impairment, frailty and related comorbidities. The PDTA case has been developed over the last 15 years in Brescia and is based on a standardised approach to diagnosis and treatment. It was designed, developed and implemented by the local health unit with the support of the local GPs unions and the local associations of health specialists.

The legal basis for the development of the case was the DDG Health n. 9942 of 5 January 2009, which allowed the establishment of the networks specialised in dementia care management. It further formed the basis of the development of a network of assisting organisations composed of: cooperatives, groups of practices, private organisations, NGOs, Sanitary Assistance Residences and Integrated Daily Centres, etc. This network underpinned the implementation of the Personalised Therapeutic and Pharmacological Plan (PTPP) of each patient. The gateway to the PDTA services is the GPs - they are in charge of the pre-diagnosis of the patient and are supported by the DSTS in finalizing the diagnosis. The CMAUs of the local health unit subsequently help the GPs with the design of a personalised PTPP for each patient.

Currently, the PDTA case is applied to about 50% of the 15,000 cases of patients affected by dementia and/or Alzheimer's in the Brescia province. They represent about 5% of the entire ageing population (64+ years) in the region. Despite a lack of counterfactual evidence, a recent comparison of cognitive impairment care practices of GPs belonging to the Brescia Health Unit following the PDTA approach and GPs belonging to other Italian regions not following this approach seems to confirm the positive impacts of the PDTA case. The key results of the study can be summarised as follows:

- An increase of efficiency in the time management of visits to the patients following specific therapeutic and pharmacological pathways related to the PDTA case study: 91% of the patients of GPs practicing under the Brescia Health Unit have at least 1 daily visit against of 60% of patients assisted by GPs in other Italian regions.

- A higher degree of compliancy to the PDTA case protocol of GPs practicing under the Brescia Health Unit than GPs performing in other Italian regions. This is also confirmed by the high degree of adherence to diagnosis of the GPs of the Brescia Health Unit with the one provided by the health specialists (69% of the cases). This is a fairly important evidence of a reduction of unnecessary visits to specialists, with possible positive impacts on overall health care cost savings.
- There is clear evidence that GPs working under the Brescia Health Unit are much less likely to prescribe "old" or "new" antipsychotics than GPs in the other Italian regions. This could also entail positive effects on the health cost savings in drug consumption.

The promoter of the PDTA case was the Brescia Local Health Unit. With the capability and persistence to establish, albeit on a voluntary basis, the integration of all local health care actors in their design and implementation of services, it served as the main catalyst of the case. This supporting role was broadly acknowledged by the stakeholders interviewed, who generally agreed that without the strong commitment of the Brescia Local Health Unit, and in particular the constant participation of its managers and staff in the initiative, the PDTA case would not have materialised. The interviewees commonly agreed that besides the strong commitment of the local health unit in supporting the design and the implementation of PDTA service, the key drivers of the PDTA case are:

- Strong coordination among GPs, DSTSs and CMAUs who agree on common standards and homogeneous quality of service.
- Common vision among the organisations and units in charge of the service.
- Strong capability to develop personalised care pathways, based on a standardised approach to diagnosis and treatments, which considers all the specificities that might occur to the patient, the family and caregivers throughout the course of a disease.
- Existence of a "network" of centres (ARS and ISD) to which patients are assigned in accordance to the degree of severity of the disease and the ability of each centre to handle each specific care pathway.
- Clear task assignment for each of the actors involved in the PDTA and a clear definition of the interactions among them (shared pharmacological treatments and therapies among GPs and health specialists).
- Adoption of common and agreed working instruments for diagnosis (e.g. a 13-items questionnaire provided by the Brescia Health Unit and the MMSE for diagnosis of dementia).
- A single and continuously updated databank with data from both patients and the service providers.

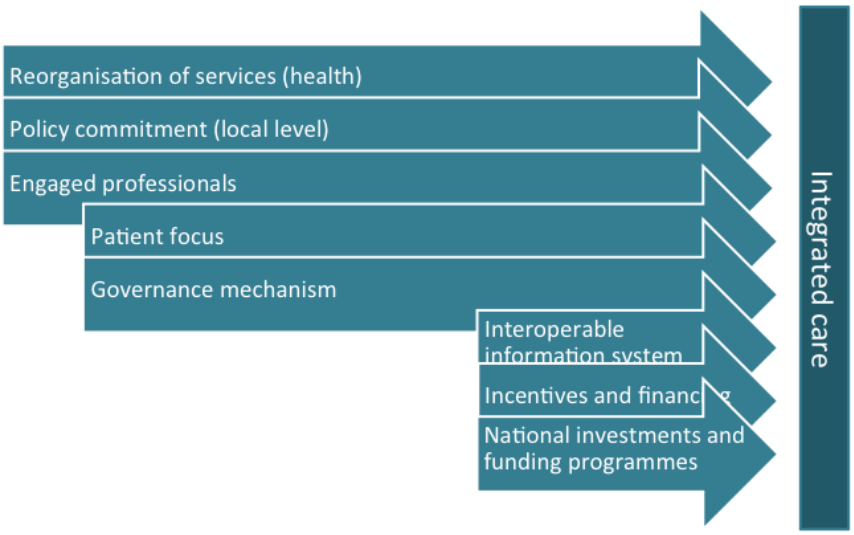
The inhibitors to the diffusion of PDTA case are:

- The lack of national and regional plans for some of the pathologies considered in the PDTA case (e.g. for dementia and Alzheimer's).
- The lack of legal recognition of the DSTSs with clear roles and responsibilities.
- Limited coverage of the patients' needs due to the lack of resources.
- Lack of incentives in the implementation of the PDTA approach (e.g. common reimbursement scheme based on service outcomes).

- Increase of workload for health care professionals mainly due to the lack of a shared information system which would be required to enable the PDTA case implementation by all health care actors.

Another relevant barrier to the full implementation of the PDTA case as an integrated care service is the dichotomy between health and social care, which are under different departments/organisations and are chaired by two different political bodies. They have different organisational structures and budgets, which certainly hinders the full integration of health and social care services in the region. The following figure summarises the main facilitators of the PDTA case

Figure 6: PDTA integrated care facilitators



Source: Authors' elaboration

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