

APPCARE

APPROPRIATE CARE PATHWAY

Work package 4

EU synthesis report

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1. Introduction

1.1. Background

Ageing problems are a common challenge for European health systems. Frail elderly people are often in need of long term care and their chronic conditions require a complex response from a wide range of health professionals. An especially vulnerable group is the hospitalized older people. Among this group, around 30 to 60% develops functional decline and the risk of readmission and hospital-related adverse outcomes is substantial, particularly in the first few days after discharge.

To achieve high-quality geriatric care and minimization of the need for hospitalization, an optimum management of geriatric syndromes and an integrated, coordinated system of care is needed. Currently, a supply-oriented approach and the fragmentation in the organization of the elderly care often do not allow providing care appropriately and, at the right time and place.

APPCARE (Appropriate care for elderly patients: a comprehensive model), a project granted by the European Commission, is aimed at creating a new model for the management of frail elderly people to demonstrate how an innovative and comprehensive management of complex and co-morbid clinical situations, may maintain patient's functional status in its clinical trajectory, optimizing health care systems.

1.2 Aims

As part of this larger European Commission APPCARE project, the current work package (WP4) focuses on providing an analysis of the current situation including best practices. The specific aims of this project are as follows:

1. To perform a local situation analysis in each pilot site including the best practices already tested on hospital care, prevention and coordinated care management at local, national and/or international level.
2. To perform an analysis of best practices already tested on hospital care, coordinated care management outside the partnership.

Taking into account the results of the local situation analyses and the lessons learnt of the studied best practices, conclusions will be drawn as to which key elements should be integrated in the new APPCARE model.

2. Methods

2.1. Selection of experts

To describe the current situation in each pilot site as well as the best practices in and outside the partnership, we chose to make use of experts. In each pilot site (Treviso - Italy; Valencia - Spain and Rotterdam - the Netherlands) four experts, with different levels of expertise covering the areas of the study (see 2.2. template), were chosen and invited to participate. The contact person of each pilot site proposed the experts to be involved in the particular pilot site. All invited experts agreed to participate (Annex 1: List of key experts in each pilot site). The use of (local) experts enabled us to get an adequate overview of the situation in each pilot site concerning the care of elderly patients in a relatively short period of time.

2.2. Developing a template

A general template was developed to cover the management of frail elderly patients, as well as best practices outside the partnership (Annex 2: General Template). The template consisted of six different parts:

1. Healthcare system profile
2. Pilot site profile
3. Hospital care management of +75 patients
4. Coordinated care management
5. Prevention activities
6. Data integration

Each part of the template included questions regarding best practices at local, national and international level.

2.3. Interviews (written or verbal)

Each pilot site gathered data and described its own current situation in the management of frail elderly patients, as well as best practices outside the partnership, following the general template (Annex 2: General Template). The experts in each pilot site were sent the template and were asked to answer the questions of their expertise. If experts preferred a telephone interview to a written survey, or a combination of both, this option was offered to them. The contact persons of each pilot site were responsible for completing the template. If two (or more) experts provided different answers to the questions, both answers/views were presented in the template. The completed

templates were sent back to contact person from the Erasmus Medical Centre (i.e. Marjolein Lugtenberg, PhD).

2.4. Analyses

The researcher of Erasmus MC (i.e. Marjolein Lugtenberg, PhD) explored and checked the templates of all three pilot sites and finalized the three local situation analyses. The international best practices were separately categorized. All information was combined and reflected upon and conclusions were drawn as to which key elements need to be integrated in the new model.

3. Results

3.1. Current situation analysis pilot sites

In this section the results are presented of each pilot site, Treviso – Italy, Valencia- Spain and Rotterdam – the Netherlands, following the general template.

3.1.1. Current situation analysis Italy – Treviso

3.1.1.1. Healthcare system profile Italy

The information contained in this section has been retrieved from: Ferré F, de Belvis AG, Valerio L, Longhi S, Lazzari A, Fattore G, Ricciardi W, Maresso A. Italy: Health System Review. Health Systems in Transition, 2014, 16(4):1–168.

Organization of the healthcare system

With a population of almost 61 million (2012), Italy is the sixth most populous country in Europe. The country is made up of 20 regions, which are extremely varied, differing in size, population and levels of economic development.

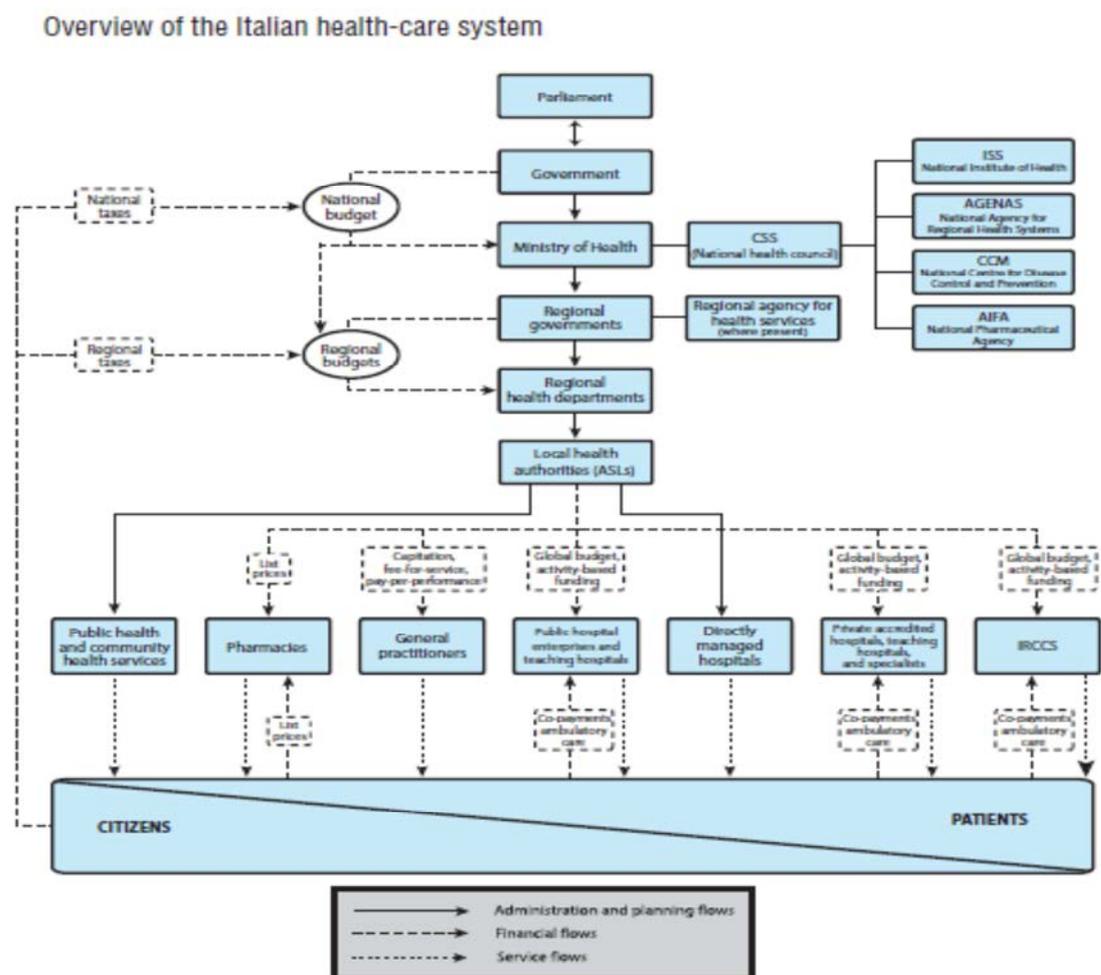
Italy's healthcare system is a regionally based system providing universal coverage largely free of charge. At *national level*, The Ministry of Health sets the fundamental goals of the health system and establishes the core benefit package of health services guaranteed across the country and allocates national funds to the regions. The national level has exclusive authority in determining the core benefit package (Livelli Essenziali di Assistenza - LEA) that must be guaranteed throughout the country free or with cost sharing, using the resources collected through general taxation. The delivery of LEA is organized into three levels: public health; community health and primary care; and hospital care.

The *regions* are responsible for organizing and delivering healthcare services. Regions have exclusive authority in execution-level planning and delivery of healthcare, as well as health protection and health-related disciplines such as labour safety, organization of professions, food safety and scientific research. Different regions have made different choices on how to use their increasing autonomy. At *local level*, geographically based local health authorities deliver public health, community health services and primary care directly, and secondary and specialist care directly or through public hospital or accredited private providers.

Primary care services are delivered by health districts, the operative branches of local health authorities. Over the last 15 years, there have been attempts to reorganize the delivery of primary care, with the objective of moving from the traditional model of GPs and other health professional working in single practices to an integrated care model that connects different health care professionals and bridges the gap between front-line staff and patients, though changes have been slow.

Inpatient care is provided through a network of accredited public and private hospitals, with general practitioners and pediatricians playing a gatekeeping role. In recent years there has been a progressive increase in Emergency Department admissions, some of which are due to inappropriate use by patients (e.g. for minor illness or prevention interventions that could have been treated by primary care physicians) for which co-payments of €25 are imposed.

Figure 1



Source: Ferré et al., 2014; *Health systems in Transition – ITALY 2014*, 16(4):pag.16.

Accessibility of care

The central issue with health service delivery is the heterogeneity of regional arrangements. In general, northern and central regions appear to keep pace with institutional, organizational and professional developments aligned with best international practices and in line with central government orientations, while southern regions appear to lag behind. The gaps between northern and southern regions mainly reflect socioeconomic and cultural factors that are far beyond the healthcare system. However, it is also likely that decentralization policies introduced in the last two decades have not favored the homogeneity of regional systems as they have provided opportunities for improvement to the best institutionally equipped regions while leaving southern regions with less central support to cope with more difficult social contexts.

While equitable access to healthcare is one of the statutory objectives of the health system, severe inequities in health status and healthcare provision appear to exist across socioeconomic population groups. A significant part of these inequities stem from geographical differences: interregional disparities in population wealth, healthcare resources and efficiency of care echoed in the geographical distribution of satisfaction levels with the healthcare system and its performance. Generally, however, over the last few years, there has been a general decrease in satisfaction levels and problems such as long waiting times for outpatient and diagnostic services exist across the country. The current system of specialists providing both public and private care might be contributing to waiting lists as well as favoring the wealthier over the poorer in terms of access to specialist care. Healthcare delivery to vulnerable or excluded groups has undergone a recent change in policy. After several years without specific regulations, legislation has now been defined to guarantee that immigrants (both legal and temporarily undocumented) are eligible to receive the same public healthcare services that are available to Italian citizens.

Quality of care

Significant geographical inequalities exist in the distribution of resources among different sectors of healthcare. Several regions, especially in southern Italy, devote a disproportional amount of their expenditure to secondary care, with a possible underfunding of primary care and long-term care. In 2009, beds for older people in residential care ranged from 3.6 per 1000 older residents in Campania (Southern Italy) to 47.71 per 1000 older residents in the Autonomous Province of Bolzano (in northern Italy). In 2010, only two out of the eight southern regions met the goal of providing homecare to at least 3.5 older people per 100 residents, while the national average was 4.1. Moreover, several indicators for the appropriateness and efficacy of healthcare and patient

satisfaction with hospital care, consistently point to disparities between the north and south of the country.

In a 2012 Eurobarometer survey, Italy had one of the lowest scores in terms of citizens' perception of the quality of healthcare provision, ranking 20th. Nationally, a 2010 survey commissioned by the Ministry of Health reported a significant geographical variability in citizens' degree of satisfaction with the healthcare system (Censis et al., 2010). Perceived quality and satisfaction indicators for most healthcare services were consistently higher in northern Italy compared with southern Italy, while central Italy displaying intermediate values.

Waiting times represent a critical issue in outpatient specialist care and diagnostic services, and existing policy initiatives, in contrast with most other OECD countries, focus on these areas. National-tier interventions to reduce waiting times included the introduction of maximum waiting times as part of the benefit package in 2002, the obligation for all providers to publish waiting lists online and a National Plan for Waiting Lists Governance adopted in 2010 in which specific criteria were introduced to manage waiting lists and to give priority to patients with certain conditions. Policy implementation occurs at the regional level, with the creation of Central Booking Centers for appointments, the use of diagnostic and therapeutic pathways and the piloting of Homogenous Waiting Groups for priority setting. Local experiences, such as the one of the Veneto Region, were successful in introducing proactive systems aimed at reducing waiting times. In Veneto, patients who were expected to wait more than 3 months for services are now actively monitored in ambulatory care: this measure is expected to reduce the number of patients abandoning waiting lists. It should also be noted that medical specialists might lack incentives to cooperate in reducing waiting times in public healthcare because these maintain demand for private practice within public structures (dual practice), with possible implications for equity.

Data on hospital admissions for chronic conditions are better than the OECD average, but they do not appear to be improving.

Affordability of care

Italy currently spends less than the OECD average on healthcare in relation to its GDP (9.2% in comparison to the OECD average of 9.3%), though public spending is increasing at a faster pace than total private and out-of-pocket expenditure. Despite the country's federal structure, most regions cannot fund healthcare with their own resources, relying on the central transfers to compensate for

the differences in regional incomes. Regions also allocate their funds differently, with some southern regions still suffering large deficits and with secondary care favored over primary and community health services.

Coordination of care

Because of these regional differences in policies and financing, a large vertical fragmentation exists in the extent and the quality of such strategies between regions or LHAs of excellence, which are mainly found in the northern part of the country, and areas where self-directive initiatives are scant. In addition, horizontal fragmentation undermines the continuity of care for chronic diseases, as integration between actors of social care (municipalities) and healthcare (LHAs) varies across the country and is mostly incomplete.

3.1.1.2. Pilot site profile Treviso

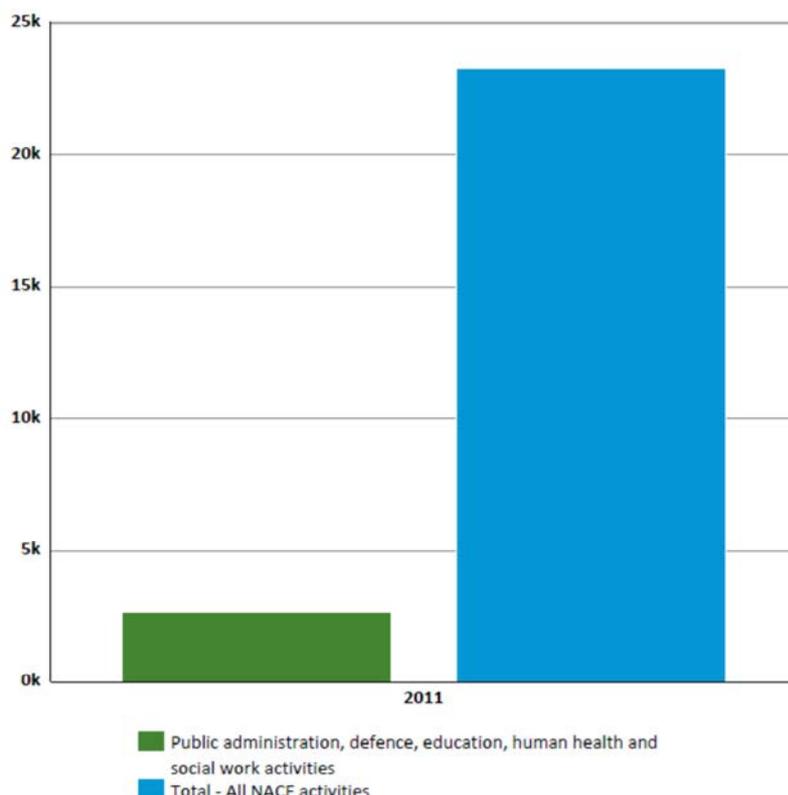
Geography

The city of Treviso is located in the north-east of Italy, and it is one of the 7 major cities of Veneto Region. Treviso stands at the confluence of Botteniga river with the Sile river, 30 kilometres (19 miles) north of Venice. The city is located on the plain between the Gulf of Venice and the Alps.



Local economy

In a very few years, Treviso area passed from a quasi-exclusively agricultural to one of the most important drivers of the Italian economy, in particular for engineering, textile, food and fashion. In 2011, Gross added value for Public administration activities (including also human health and social work activities) counted for 2,682.20 million of euro, quite a small portion with respect to the total of all NACE activities, as shown in the chart below.



Source: data Eurostat retrieved from www.knoema.com

Population/Demographics

The Treviso territory follows the demographic trend of Italy with the progressive increase of population age (citizens aged over 75 and between 65 and 74 years), as shown in the table below:

CLASS AGE	MALE	FEMALE	TOTAL	%
0-14	32.417	30.646	63.063	15
15-44	79.143	77.266	156.409	37,3
45-64	58.744	59.072	117.816	28,1
65-74	20.160	22.541	42.701	10,2
> = 75	14.893	24.846	39.739	9,5
	205.357	214.371	419.728	100

Source: LHA n°9 Strategic Plan 2014-2016 update 31.12.2012

Health and social care structures

Local Health Authority n°9 provides health and social services for a total population of 419.728 inhabitants (2012), located in Treviso and other 36 minor municipalities. The area covered by LHA9 is 986 Km², with a density of 425 inhabitants per km². In this area, LHA manages directly 2 public hospital: the high-specialized “regional” hospital Ca’ Foncello in Treviso and Oderzo Hospital covering acute needs for the Northern part of the territory. The hospital beds rate for these public hospitals is 4,0 per 1.000 inhabitants.

Beyond the public structure, the health system counts on a rehabilitation hospital located in Motta di Livenza (the green one in the map) which is Public-Private Partnership and 12 private accredited health structures: in Treviso city, the main one is “San Camillo” Hospital. This private structures may provide health services for inpatients and outpatients. Through an integrated assistance model based on n. 2 territorial units called “*health districts*”, it grants the satisfaction of people’s global needs, with particular regards to health and social protection actions.



The primary care is the most important part of territorial services, characterized by direct access to services and representing the nearest health delivery point for citizens. Primary care providers are in charge for the global health of a person and they address, if relevant, to the specialist care in order to meet health needs. The Health Districts grant the most appropriate answers to citizens within the

process of the professional integration involving territorial operators (both health and social ones), and the other operators of the healthcare network – which are mainly grouped around the hospital services.

Primary Care is provided, in general, by General Practitioners and Pediatricians, and also by “Internal Outpatient Specialists” (*Specialisti Ambulatoriali Interni*) which have stipulated specific agreements with the LHA9. In 2012, Treviso primary care counted on 267 GPs, 53 Pediatricians and 147 “Internal Outpatient Specialists”.

Finally, it is important to notice that LHA9 is also one of the most important actors in social affairs at local level. In fact, municipalities are responsible for social care, but, according to the regional health system, they can delegate social care tasks to Local Health Authorities, to empower integration of services. The new Regional Health and Social Plan 2012/2016 confirms a model based on integrated services to the person, as the more adequate response to population needs. The planning tool for social and health policies at local level is the so called “Piano di Zona” (Local Plan). Through the Local Plan the following objectives are pursued:

- promotion of an integrated social planning able to link protection with welfare promotion strategies for citizens;
- endorsement of territorial equity, supporting a balanced services supply and promoting unique rules and behaviors;
- fostering of a supply system able to detect the evolution of population needs;
- fostering the full integration between public and private sectors interested in the set up of an integrated system of social intervention and services;
- support and fostering the management of the health and social integration.

3.1.1.3. Hospital care management

Patient hospital admission

Elderly patients (≥75 year) enter spontaneously to the Emergency Department (ED) because of health urgency, because of needs perceived as urgent, or by referral of the family doctor (5-10 % of cases). They account for 20% of the total number of patients acceding the ER. When acceding the ER, patients are welcomed and firstly assessed by nurses. This first evaluation is called Triage and aims at determine the priority of interventions. The Emergency Department (ED) is the only one responsible for triage and works for patients of every age group. Currently there are no particular

admission care paths for different populations, except for babies and pregnant women. No geriatric assessment scale systems are foreseen for +75 patients.

The Emergency Department may decide to:

- 1) send the patient back home if it is not necessary to admit him to the hospital;
- 2) hold the patient in 48h Short-term Assessment Unit (which is not considered a proper “admission”) inside 3 facilities: Short-term Assessment Unit of Emergency Room, Short-term Assessment Unit of Urgency Medicine and – since 3 years, at an experimental stage – Short-term Assessment Unit of the Geriatric Ward. Patients with multimorbidity are preferably sent to the Geriatric Short-term Assessment Unit;
- 3) directly admit the patient to the hospital wards. If the triage assessment doesn’t end in the admission to a specialist department (surgery area, intensive area, or specialist area), patients are admitted to the Internal Medicine Department.

The admission rate for ≥ 75 -year-old patients is 49,4%.

Inpatient care & discharge

Elderly patients are treated by the four above-mentioned internal wards and all the other wards that may be involved in the care process according to the clinical conditions. They receive all the necessary care to address the clinical problem, taking into high consideration co-morbidity aspects. Nevertheless, individualized geriatric care takes place only in the Geriatrics ward and the Geriatric Short-term Assessment Unit. In 2014, the average hospital length stay for +75 patients in Treviso hospital was 10,5 days.

Discharge takes place only when the clinical conditions are stable enough to guarantee a safe discharge and when home assistance is settled if necessary (delivering devices, finding an informal support or organizing a temporary or permanent institutionalization). When time required for this organization is not compatible/acceptable with the timing of a ward for Acutes, a relocation both inside and outside hospital for post-acute phase (Intermediate Care Unit) is arranged.

Excluding deaths, discharges can take place in several ways:

- Ordinary discharge (home, residential care for already institutionalized patients)
- Home Care Assistance
- Residential care home (1° admission)
- Rehabilitation centers both inside and outside the hospital.

Open issues

The main open issues may be summarize as follow:

- 1) The use of geriatric assessment instruments that can analyze comorbid, assessment of the cognitive condition preceding the illness that causes the entry to the ED, assessment of the functional pre-morbid condition is not standardized and applied since the ER access of elderly patients. These data, which are at the base of the CGA (Comprehensive Geriatric Assessment), allow the prognostic stratification thus determining a diagnostic-therapeutic-care procedure that would choose the right analysis and treatments and would follow the medical 'path' of the patient, being quick and respecting the discharge planning. The stratification of patients into categories of pre-morbid condition allows to start the most appropriate diagnostic-therapeutic procedure.
- 2) The absence of clear or shared criteria according to which patients are sent to internal medicine or Short-term Assessment Unit, except patients that have criteria for Urgency Medicine.
- 3) Individualized geriatric care is an approach that could assist them along their hospital path and direct them toward the post-hospital phase, but it is not currently applied everywhere in the Internal Medicine Department.
- 4) High hospital admission rates, and the consequent increases of the iatrogenic risks caused by an inappropriate and/or prolonged hospital stay.
- 5) Poor or absent follow-up of patients: this fact is important not only for the assessment of the medical conditions and the post-hospital care, but also for the consequences on repeated admissions.

Best practices (local and national) for hospital care management

Since May 2012, in Treviso Hospital there is a *Geriatrics Short-term Assessment Unit*, from Monday to Friday, 8 am – 7:30 pm, based on the multidimensional assessment and therefore on the appropriate medical-diagnostic-therapeutic procedure in order to offer a support/choice to the Emergency Room thus being an additional filter for the admission to the hospital for Acutes. The aim is to achieve quick diagnostic and therapeutic procedures, with good results for the patient and saving of money compared to the admission to the hospital. In this way, admissions can be reduced, especially the inappropriate or useless ones, thus offering quality and comfort to the patients who are undergoing analysis or treatments, and reducing the negative effects of a prolonged hospital stay. The activity until now done, referred to about 2,500 patients sent to this unit by the ED, shows a percentage of 67% elderly people going back home within 48 hours. Moreover, there is a better

care of the elderly patient: also patients who are not admitted receive a medical note, a medication reconciliation and a guide to post-hospital care by territorial services. Equipped with 8 beds, it is able to assess 4 new patients per day. It is important to notice that in a weekly experience characterized by a clear boost of the short term observation activity (working 24h a day), the total number of hospital admission fell down from 47,5% to 40,3% (-7,2%).

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3.1.1.4. Continuity of care after discharge

Continuity of care flow

The patient, when discharged, receives multidimensional and multidisciplinary care. In the geriatric ward, each patient undergoes a multidimensional assessment. Besides, we assess pre-hospitalization and discharge needs. The assessment takes into account also the home characteristics and the possible availability of a care-giver for the discharged patient. Once we have these data, we can create a protected personalized discharge procedure for each patient and activate the homecare by the territorial care services if necessary.

For complex cases or for patients who do not have a care-giver, we can activate the social services. Also by calling the social worker, we can create an individualized procedure for the patient that can result in territorial care services or in the definitive or temporary institutionalization (residential homes). In this case, we can provide 16 beds – as an intermediate facility – for discharged patients who need further controls before going back home or in a definitive institutionalized structure.

A different procedure is set up for patients with neoplastic pathologies. For these patients, there are home care services provided by territorial palliative care and/or by ADVAR, a volunteering organization that takes care of terminally oncological patients by giving them palliative cares. The staff is made up of palliative doctors, nurses, care workers and psychologists for the patient and his relatives' support. Besides, there are some volunteers. The service is provided by an internal system

that accepts information and care requests, starts the in-home care, handles the local districts, the in-home staff, the family and the hospice, a facility dedicated to patients who can no more be treated at home.

Integration between hospital and territorial care services.

Once the case complexity and the necessary care needs have been defined after discharge (according to the above-mentioned multidimensional assessment), the discharge is activated.

To grant the Continuity of Care, a specific Department has been created in order to ease the application of established care procedures and the communication between hospital and territorial services. Through the Continuity of Care service, the hospital ward informs the 'Operative Territorial Centre' (*Centrale Operativa Territoriale – COT*) about the case: the COT is in charge to alert the competent district operators. The latter visit the patients in hospital, and meet physicians and nurses to better organize the patient's return to home. Also family and informal caregivers are involved and have the possibility to get in touch with district operators.

If after the multidimensional assessment of the patient, the need for social care is envisaged, the case will be reported, online or directly, to the social service of the hospital who visits the patient. After the assessment of the social worker, a specific procedure is established to include the patient in a social care program.

The patient is taken in charge by the territorial services (doctors and nurses who works on the territory) within 48 hours after his discharge. Once discharged from the hospital, the family doctor is responsible for the patient.

As previously stated, if necessary a homecare program is arranged through the Integrated Home Assistance model. The integrated home assistance is a group of medical, nursing, rehab and psychological care services provided at home for a needing patient, according to individual assistance plans defined by professionals involved in the single case management. In case of social need, the healthcare interventions are integrated by social ones, coordinated/provided by municipalities. Data analysis highlights how the progressive increase of population in LHA9 territory is proportional to the increase of operators' home accesses. From 2007-2011, following an increase of +75 years population, also the home accesses increased to 57%.

From an organizational point of view, each district settled a Point for Home Healthcare to be contacted for the organization of assistance. During the years, this model showed some critical aspects in particular the lack of a quick and monitored answer to the health needs. This was mainly due to the absence of a unique reference point. To meet this challenges, the LHA9 introduced a Reference Point for Homecare Assistance (a single phone number for homecare patients working h24 7/7) which is now complemented by the Territorial Operative Center – COT.

District operators give particular attention to caregivers, recognizing their relevant role in the management of chronic patients. Given that the current rate of 1.5 (almost 3 family caregivers each 2 +80 year elderly people) in ten years will be drastically reduced to 0.7 (a half caregiver per elderly) it is necessary to adequately train and support them in the management of more complex situations;

Continuity of care networks (Institutional and informal)

LHA9 currently counts 202 volunteer associations operating in the healthcare sectors, dealing with hospital and home assistance (as a support for families), patient transportation, and other interventions for elderly groups such as company or grocery home delivery. However – except for the case of ADVAR described in the previous section – no institutional partnership is established. So, services are mainly institutional and formal.

In the framework of homecare support programs, LHA9 organized a free training course for familiar assistant. The choice of training a familiar assistant is a way to protect the elderly providing the necessary know-how to informal caregivers. This course presented the organization of healthcare system in Treviso area, together with management aspects of an elderly patient (how to clean an in-bed patient, how to move them, etc.).

Open issues

Most of the problems faced every day by the continuity of care service concern the constant increase of care needs for each patient and the increase of chronic pathologies and of frail patients who need support. There is also an increase – noticed above all in these last years – of social questions that it has to be faced every day.

The complexity of cases and of care networks built around the patient calls for an increase of forces at territorial level in order to facilitate cooperation among operators. Nowadays territorial resources

only cope with patient whom clinical framework requires a nursing interventions (catheter, medications, intravenous etc.) at home.

Recently, a new project has started to inform services about all the frail +75 patients that should be home monitored because of their chronic illness, regardless the eventual need of nursing care. The project has begun after the indication of two pathologies that are the main causes of hospital readmission: chronic heart failure and chronic COPD.

The awareness toward frail elderly patients who suffer from chronic pathologies, arises from the understanding of care and control needs of them and from the fact that taking care of them would reduce the access to the Emergency Room and the repeated admissions for each patient: this would surely have a positive effect on the patient's functional condition and quality of life.

In this case, the main challenge will be the standardization of this information system to all chronic patients. In this case, it will be necessary, not only a good cooperation among the various workers inside the continuity of care service, the territorial operating center and the departments, but also a good cooperation with the doctors of family medicine who are responsible for the patient after his discharge. The new organizational model based on the COT services may represent a good starting point to reach this goal.

Best practices (local, national) for continuity of care/coordinated care management

The Territorial Operative Center – COT works h24 7/7 and aims at grant pathways for continuity of care granting an equal access for citizens to the opportunity offered by the health and social care. According to this principle, it coordinates pre-defined pathways among different services/units/operators in which context the clinical and assistance trajectory of the patient develops itself.

COT basically manages in a rational, transparent and controlled way all the flows from hospital wards, through the coordination of Protected Discharge/Protected Admissions, in order to lead the patient in the complex assistance pathway; it protects the transfer from a healthcare unit to another, and from an assistance level to another, collecting in an organized way all the opportunity offered by the welfare system.

Another important task of the COT is the ease of the information exchange between the LHA9's internal professionals and GPs or other accredited professionals on the procedures to assist and take in charge complex situations; thus, it may be easily extended to situations when problems are not related to the passage from hospital to home care, but they are due to new health and social situations reducing the autonomy of patients (loss of caregiver, loss of home) and, consequently, heavily affecting health status.

3.1.1.5. Prevention activities

Prevention initiatives

The main focus of the Prevention Department is primary prevention, with screening programs and other initiatives aiming at adopting healthy life styles to fight the insurgence of chronic diseases. Among them, it is worth mentioning the promotion of physical activity through the so called 'Walking Group - Gruppi di Cammino': they are a good opportunity to "move" and socialize addressed to healthy or at risk adults, or adults affected by chronic diseases allowing a moderate physical activity. They are implemented thanks to a networking with Municipalities, Associations, District operators and GPs. The Prevention department manages the overall organization of groups while two association of sport promotion (selected with a public tender) lead the group and deal with the economic aspects of the activity. Groups counts 20-30 people meeting twice a week for a 1-hour walk following established pathways. For the first 6 months, the meetings are leaded by an expert, after this startup phase groups become autonomous and are coordinated by a walking leader, trained and constantly monitored. Walking with other people has positive effects on health and stimulate socialization, enhancing self-esteem and overall wellness. From July 2010 49 walking groups started in 20 of the 37 municipalities of the LHA territory, with almost 1.150 people attending. The success of the initiative is proven by the survival rate of groups after the guided startup phase (95% of groups still active after the guided semester).

Besides primary prevention, some interesting initiatives of secondary prevention have been implemented. In the best practice section, we describe a successful program mainly focused on physical activity and chronicity. Furthermore, we may mention a series of tutorial videos, available on the LHA9 YouTube channel and website, to train patients and caregivers on assistance practices to be performed at home. Soon after the on-line videos publication, the channel has quickly joined 25.000,00 displays and videos appear among the first results in case of search with related keywords.

Open issues

Given the high prevalence of costly frailty among older people, an increasing number of strategic plans at different levels (EU, national, etc.) highly recommend the support of preventive actions which may significantly improve the functional status and consequently the quality of life of elderly people. Currently, the main challenge to face is the absence of links between prevention and hospital/territorial settings: for instance, the indication of prevention actions are not standardized in the hospital discharge protocols. The standardized use of the Comprehensive Geriatric Assessment – foreseen in the APPCARE project - offers an opportunity to detect frailty risk factors, giving the chance to suggest and/or perform preventive actions in order to slow the incidence of new morbidities.

Best practices (local or national) for prevention

Since 2011 in the Ulss 9 district (local health service), a *program of tailored exercise prescription for patients with chronic and complicated pathologies (secondary prevention)* is active. These activities are aimed at patients of all ages, including the elderly, suffering from cardiovascular, dismetabolical, pneumological, neoplastic and nephrological diseases. In fact a great deal of scientific evidence has proved the important role of physical exercise in patients suffering from chronic degenerative pathologies: the prevention of accidental falls and re-fracturing of femurs in the elderly, mortality decrease and improved quality of life in patients with chronic heart failure, diabetes prevention and improved metabolic control in diabetic patients and a reduction of major cardiovascular events in cardiopathic subjects. Furthermore, the latest guidelines of the European Society of Cardiology strongly recommend physical exercise both in primary prevention for sedentary subjects and in secondary prevention for patients with ischemic cardiopathy and chronic heart failure (class of recommendation I, level of evidence A).

It is well known however, that just as for pharmacological treatments, exercise has to be a continuous therapy for patients with chronic-degenerative diseases. Therefore since 2011 we have undertaken a specialized program which includes an evaluation phase, supervised exercise phase, after discharge exercise phase, follow up phase. To our knowledge there are no similarly structured programs for exercise prescription in chronic diseases locally, nationally or even internationally.

Currently, the number of assessed patients has reached 490 (average age 59): among them 48 patients are +75 years old. Among the +75 evaluated patients, 30% has an ischemic cardiac disease;

50% is eligible to start a physical exercise program and 30% started it. It is important to notice, as main open issue, that the national health system do not cover these treatments by and therefore patients in economic hardship (often elderly) cannot afford them since the cost of the gym has to be paid by the patient.

3.1.1.6. Data integration

Information flow & level of interoperability

Over the last decade, the issue of the healthcare digitalization has become more and more crucial in all-level policies. The main development directions are dematerialization, on-line services and operational continuity. They represent the strategic field of ICT interventions in Local Health Authority 9. Since 2001 with the ESCAPE project (Electronic Signature in Care Activities for Paper Elimination), LHA9 has developed a model for the management and distribution of digitally signed clinical reports. Other dematerialization project followed, both internally

Hospital IT system

Since 2001 with the ESCAPE project (Electronic Signature in Care Activities for Paper Elimination), LHA9 has developed a model for the management and distribution of digitally signed clinical reports. The dematerialization process started in 2003 with laboratory clinical report and has been extended to the all care process of patient, from outpatient visit to E.R. access and hospital admission. The objective is the digitalization of the entire clinical documentation issued in every patient's access, to feed data collected in the Electronic Patient Record. The dematerialization also allows an increase of data security and control on access to them, integrating the information coming to different IT system and medical devices on a single tool: the electronic patient record.

In parallel, other tasks have been performed in order to complete the hospital IT system and to create a solid integration platform, based on international standards, to grant the information exchange among the different software without limiting their operational autonomy. Briefly:

- Dematerialization of E.R. report, reaching in short times 95% of report electronically signed;
- Complete digitalization of waiting lists management for planned admissions, granting the standardization of the process and the full traceability of waiting time for the admission;
- Implementation in the all hospital of the electronic management of requests for internal health services for admitted patients (Order Entry), increasing the security level in patient

identification and traceability of requests, and rationalising the transfer of patients and professionals;

- From 2010 a software integration platform, called middleware, integrates the different specific software and allowing the information exchange between software using the international standard HL7. This architecture has been updated and extended in the last years and is continuously evolving to connect a higher number of applications.
- The repository, initially conceived to store lab reports, has evolved to contain and make accessible all digital documents: from discharge letters to outpatient and E.R. reports, and to e-prescription. A “displaying” software called Talete allow to search, read and print all the reports referred to a patient, to grant privacy but, above all, to ensure data usability and protect patient’s health.

Data workflow within hospital care

When entering the hospital (ED), the doctor and the nurse collect patient’s anamnestic data (past medical history, history of the present illness, medications, and allergies). The diagnostic and therapeutic procedure (biohumoral analysis, medical imaging, drugs) undergone by the patient inside Emergency Room is recorded in the ED report, both in case of discharge and in case of admission to the hospital. During stays in hospital wards, the following data are collected: past medical history, history of the present illness, drug therapy, comprehensive geriatric assessment scales (used only by Geriatric ward), data concerning the nursing problems faced by the patient before hospital admission (for example: a patient in charge of territorial care services). These data are reported in the ward patients’ record, with electronic or paper support. Now Geriatric ward is testing a computerized medical record. When the patient is discharged, he receives a discharge letter created and stored electronically, which can be consulted online by the staff.

The staff has to write a hospital discharge form for all the patients admitted to the hospital (according to the DRG principle). It contains patient details (age, sex, address, education); admission information (hospital and ward); discharge data (ordinary, residential care home, in-home care...) or death; main analysis and discharge codes, diagnostic and therapeutic procedures, codified according to the International Classification of Diseases ICD-9 CM.

Territory IT system

The Territory IT system was characterized by fragmented applications, due to the strong difference among services provided to citizens in the districts (disabilities, home assistance, social services,

Mental Health, etc.). In recent years, the main efforts were concentrated to enhance coordination of IT processes aiming at integrating the different software in use. Thus, the territorial IT systems are moving towards a complete integration of information flow from/to hospital, compliant with the new model of primary care. In order to keep a coordinated management of the system, a specific committee has been created.

General data workflow continuity of care

The data of patients admitted and assessed by Continuity of Care service or by hospital social service are recorded and stored in organized databases. This allows – if there is a repeated admission of the patient – to recover and reuse them. When discharged, the patient's data are sent to the COT that records them inside its databases. Hospital doctors, health departments and family doctors could gather information about their patients by asking the COT. This way of working, allows for the creation of a network which includes the patient and guarantees care for him.

Open issues

The integration between hospital and territorial systems have to be strengthened and extended to other patients' information flows such as accredited medicines, municipalities' social services and residential homes. Some important steps have been made, such as for instance the regional project 'DOGE' (see best practices). Besides this, the main issue is not a lack of data integration, but a lack of knowledge of the level of integration of the software in use by the health professionals involved in the elderly care. This is particularly true in the hospital setting. On-field training on IT system opportunities should be enhanced.

Best practices (local, national) for data integration

DOGE is a Veneto Region project for the creation of a network of services *for sharing clinical data for primary care professionals, namely GPs and pediatricians*. The DOGE project allows for the creation of a network among 70 GPs and pediatricians involved. In May 2013 94% of GPs, 83% of pediatricians and 10% of specialists working in the Veneto Region were connected to the regional network.

DOGE has made it possible to activate four types of services:

- *Personal record services*: these made it possible to manage the personal details both between the regional and local records offices of the hospital IT systems, and between the hospital IT systems and the GPs/FCPs.

- *Document services*: these are the services that permitted documents to be shared between hospital IT systems and GPs/FCPs, using specific profiles defined by the IHE standard. Four types of services were involved in this case: notify documents, query documents, retrieve documents and submit documents;
- *e-Prescription services*: these are the services involved in the prescription cycle for which the GPs/FCPs and hospital IT systems are responsible. They concern the creation and notification of the ePrescription, thanks to which every year 3.000.000 euros can be saved;
- *Privacy services*: these are services linked to the collection and consultation of consent, areas which, in short, included processing the citizens' consent for the use of their personal details and the exchange of clinical documents between the GP and the LHA.

One of the added values of the experience gained through DOGE can be seen in the methodology used for drafting the project specifications, both standard and universal that can be applied in other similar contexts.

The regional *Electronic Health Record (FSEr)* is a four-year long project lead by the Veneto Region to meet the national strategy defined in the Digital Agenda and planned by the "Decreto Fare" that in June 2013 established deadlines for realizing the EHR at national level. The Veneto EHR model guarantees the clinical data sharing among all the LHAs and Hospital Trusts aiming at enhancing the healthcare process on a regional basis. The innovation of the model is a complete sharing the whole process with the professionals working inside the healthcare regional system. This happens thanks a bottom-up approach that is intended to make the EHR a working tool capable of answering the professionals' questions in the most efficient way. Once ready, the tool will offer a lot of advantages thanks to provide resources available to make future healthcare affordable at regional level. This will be consistent in giving each citizen the chance to access his/her own data safely, by introducing new management models that guarantee the beginning of innovative paths in healthcare continuity, producing advantages as for efficiency and economic saving.

The majority of the information regarding the best practices DOGE and FSEr has been retrieved from: source: Arsenà.IT website

3.1.2. Current situation analysis Spain – Valencia

3.1.2.1. Healthcare system profile Spain

The information contained in the healthcare system profile section has been retrieved from: García-Armesto S, Abadía-Taira MB, Durán A, Hernández-Quevedo C, Bernal-Delgado E. Spain: Health system review. Health Systems in Transition, 2010, 12(4):1–295.

Organization of the healthcare system

The statutory Spanish national health system is universal coverage-wise, almost fully funded from taxes¹ and predominantly within the public sector. Provision is free of charge at the point of delivery, with the exception of pharmaceuticals prescribed to people aged under 65, which entail co-payment of 40% of the retail price². After a 25-year transition from a centralized model of legislation, and planning and provision of health services, health competences were totally devolved to the regional level from the end of 2002; this devolution resulted in 17 regional ministries or departments of health with primary jurisdiction over the organization and delivery of health services within their territory, thus health expenditure is mainly determined by the regional administrations.

¹ Around 2% of the total funding comes from the social security fund attributable to the special regime for civil servants, catered for by three publicly funded mutual funds: MUFACE, MUGEJU and ISFAS (further description of civil servants' unique status can be found under Section 2.2 Historical background: devolution's path).

² Patients with certain chronic diseases are exempt from this co-payment. User co-payments for pharmaceuticals were widely introduced in 1978 for social security users below 65 years of age, initially amounting to 20% of the actual retail price of prescription drugs (it would be subsequently raised to 30% in 1979 and to the current 40% from 1980). Drugs prescribed under an inpatient regime are excluded.

Figure 1. Territorial organization of Spain: autonomous communities

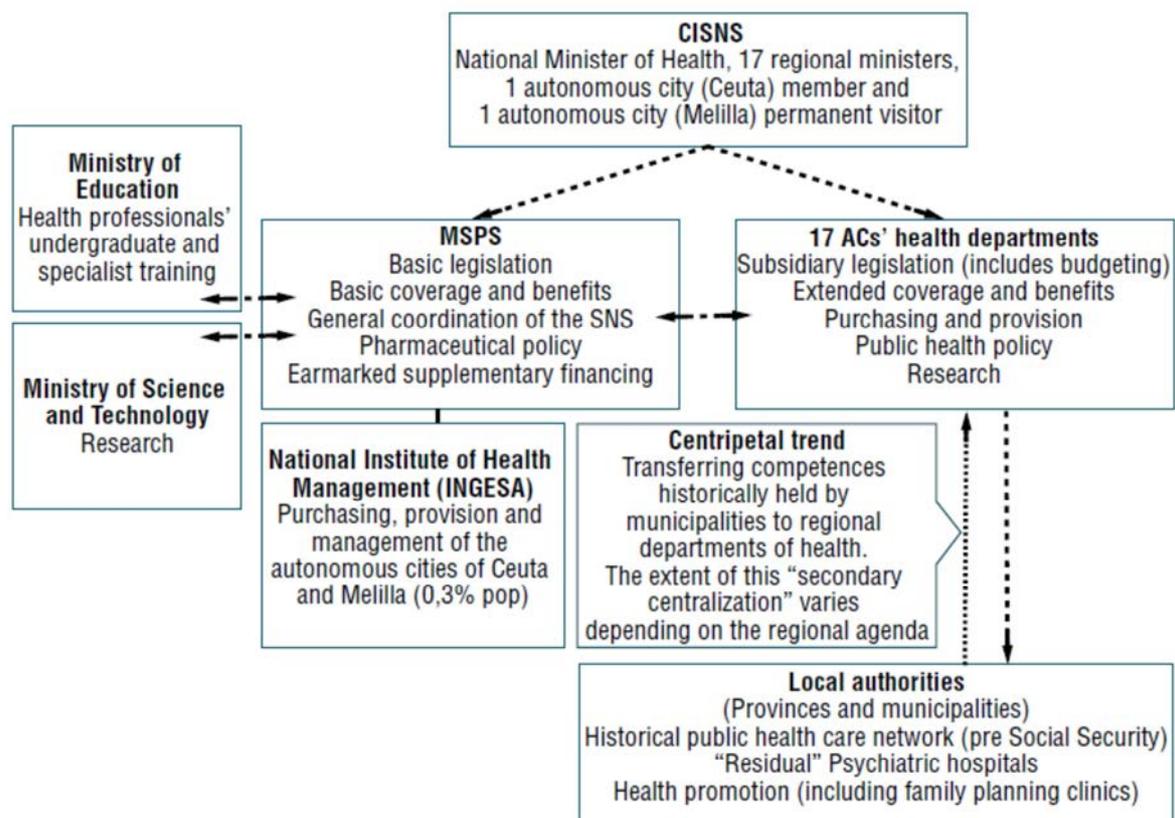


Recent modifications of the mechanism for regional funding also sought to increase normative competences on revenue raising (taxation). The national Ministry of Health and Social Policy (MSPS) is therefore vested with only a limited extent of powers. It has authority over legislation on pharmaceuticals and is the guarantor of the equitable functioning of health services across the country; this last competence includes the definition of the basic benefits basket, the setting of minimum thresholds for services regarding expenditure and quality, and a performance monitoring function (termed “high inspection”). In essence, the Ministry has the challenging mandate of playing the core role in the coordination of the Spanish national health system spread through 17 regional health systems, which are accountable only to the regional parliaments and thus not hierarchically linked to the national level. Indeed, this framing prescribes negotiation, consensus and additional earmarked funding as the key drivers of policy-making within the Spanish national health system; most of this dialogue takes place within the Inter-territorial Council of the national health system (CISNS). Conceived as the highest body for coordination, the CISNS comprises the 17 regional ministers of health, chaired by the national minister. The national Ministry, in its capacity as the coordinator of the Spanish national health system, plays the secretariat role, elaborating the proposals and executing the agreements reached within the Council and holding the responsibility for seeking adoption of the recommendations of the CISNS.

Other stakeholders such as the national Ministry of Education and the Ministry of Science and Innovation, as well as municipalities, play some role in the overall structure of the Spanish national health system. In addition, it is only recently that the national Ministry has been invested with the responsibility for social policy (traditionally linked to the Ministry of Labour and briefly to the

Ministry of Education), with the mandate to implement the National System for Autonomy and Assistance for Situations of Dependency (SAAD) which is running from June 2009. Primary jurisdiction over services administration and delivery, and cash transfers within the SAAD is also held by regional governments; hence the role of the national administration in social services is similar to that performed regarding health; likewise, the existing governance structure contemplates an Inter-territorial Council of the SAAD, so far integrated by the regional Minister holding the social services portfolio in each Autonomous Community (often the Minister of Labour and Employment) and the corresponding national Minister (the Minister of Health and Social Policy). The linking (if any) to the existing health governance framework is still to be fully spelled out.

Figure 2. Statutory National Health System



Accessibility of care

The entire Spanish population is covered by the National Public Health System, and about 8% of the population has double coverage, public and private. The private health institutions are not supported by public taxes or social security contributions. Hospital services and specialized care provided by private institutions, commonly insurance companies, is supported by the fees of the insured persons.

The National Public Health System is universal and free, and ensures assistance to the whole population. There are also some public hospitals which are managed by private management companies, but these are also universal and free for the whole population. Moreover, general or regional governments have agreements with public and private entities to improve the service offered. These agreements can be for the performance of certain diagnostic tests, medical transport, equipment maintenance, etc.

Regarding timely accessibility, currently the Valencian Community average waiting time in the public healthcare system for specialist visit is 57 days³. Waiting time is faster for surgical procedures, the waiting time between the first visit and the intervention is less than one month. On the other hand, waiting time in an emergency service is around 2-3 hours. This waiting time is higher in public healthcare compared to private healthcare.

Regarding geographical accessibility, it is stipulated that the displacement between the patient's house and the referral hospital or healthcare centre is less than 30 minutes.

It is important to highlight that the Spanish public healthcare system is accessible for all the people demanding care, whether they need it or not. The problem is how to detect those people who need care and don't demand it.

Quality of care

To be able to provide high-quality services, the health assistance has to comply with the following requirements: to be effective, efficient, safe, demand-adapted, accessible and continuous in both time and area. The National Quality Plan for the Health System issued in 2006 gathered the principles that serve as the basis to provide patients, users and professionals with quality assurance and to achieve a National Health System that is:

- Patient-oriented, taking into account the specific needs of users and patients;
- Oriented to protection, health promotion and prevention;
- Equity-guarantying;
- Committed to the promotion of clinical excellence;

³ Conselleria de Sanitat. Informe de Situación. Accesible en <http://www.san.gva.es/web/dgas/informe-de-situacion>

- Interested in boosting the evaluation of evidence-based technologies and procedures;
- Focused on enabling the widespread use of the technologies targeting improvements on the patient, user and citizens' assistance and on the integration of services;
- Focused on planning the need of human resources to cover the needs of the different services properly;
- Transparent towards all stakeholders;
- Evaluable in the results of its actions.

The Health Systems of the Autonomous Communities are expected to be externally audited in order to evaluate their effectiveness. Professionals are also asked to give their opinion on the functioning of the system by means of satisfaction surveys that are processed in the quality department of each regional Health System and forwarded to the central departments.

Affordability of care

In the Valencian Autonomous Community, in 2011 the total health expenditure was €6.171 million, which represents an expenditure of €1.313 per capita on average⁴. To increase effectiveness and sustainability of the system, a set of indicators were established similarly in all autonomous communities, to assess the pressure in the management of resources and expenditure of the National Public Health System in order to regulate certain costs and thus to maintain the quality of the National Public Health System.

Coordination of care

In the Valencian Autonomous Community there is a link between the primary care and the specialized care services, not only at an organizational level but also in the delivery of care. There is an electronic clinical record system sharing information of patients that has been recorded in any of the two care levels managing the patients' clinical data (ORION and ABUCASIS). For example, the Hospital La Fe has implemented different initiatives aimed at improving the care delivery integration for complex chronic patients. One of the most relevant ones, is the implementation of an assistance model for these patients, promoted from the department of Home Care and Telemedicine, that enables the provision of services of primary and specialized care supported by educational strategies and the inclusion of ICT tools to monitor the complex chronic patient and keep him/her more stable contributing to a reduction of health services consumption related to chronic patients.

⁴ Ministerio de Sanidad, Servicios Sociales e Igualdad. Informe anual del Sistema Nacional de Salud, 2012 Disponible en www.msssi.gob.es

3.1.2.2. Pilot site profile Valencia

Geography

Spain has a population of 46.439.864 (1 January 2015; INE 2015) and covers 505 955 km², the third largest country in Western Europe. The Spanish territory also includes the Canary Islands, located west of Africa, and two autonomous cities on the north side of the African continent, Ceuta and Melilla. The Balearic Islands, in the Mediterranean, are the other relevant Spanish island territory. Administratively, the territory is organized within 17 autonomous communities plus the two autonomous cities in the north of Africa. The average population density in 2015 was 92.1 inhabitants per km². However, the population tends to concentrate in urban nodes, with the capital, Madrid, registering the highest population density (801/km²) and the coastline, as the city of Valencia.

Valencia is the third largest city in Spain. The city is surrounded by the Mediterranean Sea, with a maximum altitude of 113 meters. The average temperature is around 18.7°C with also a high rate of humidity (around 66%). Sunny days occur more frequently than in other European countries, with an average of 87 clear days per year and 217 days with sunny spells.

Local economy

In 2014 GDP in the Valencian community was 99.345 million euros. Valencian Community occupies the 4th position in the ranking of GDP of the autonomous communities of Spain. GDP per capita in 2014 was € 20,073.

Population/Demographics

A total of 5.104.365 inhabitants live in the Valencian Community. Concretely, the city of Valencia has a population of 800.666 inhabitants. A total population of 1.507.108 people including metropolitan area. The proportion of women is higher than men, with a total of 50.56% of women, and men 49.43%.

From the total population of the Valencia Community, 472.145 people (9.2%) are between 65-74 years old, and 442.246 people (8.6%) are +75 years old.

Health and social structures

Table 1. Total number of resources at both Valencian Community and Valencia Region

	Valencian Community	Valencia Region
Primary care healthcare centres	888	421
Hospitals	60	28
Beds	13621	6680

HEALTH RESOURCES:

A. Public health issues:

- Information and epidemiological surveillance;
- Health protection: design and implementation of health policies;
- Health promotion and prevention of diseases;
- Protection and promotion of environmental health;
- Promotion of food security;
- Surveillance and control of possible health risks resulting from the import, export or transit of goods and international movement of travellers;
- Protection and promotion of occupational health;

B. Primary care:

- Health care delivery (scheduled appointments or urgent basis) at the healthcare centres or at patient's home;
- Prescription and implementation, where appropriate, of diagnostic and therapeutic procedures;
- Prevention and health promotion activities, family care and community care;
- Information and monitoring activities in health protection;
- Basic rehabilitation;
- Specific services related to women, children, adolescents, adults, older people, vulnerable groups and chronic patients;
- Palliative care for terminally ill patients;
- Mental health care in coordination with specialized care services;

C. Specialized care:

- Specialized care at the hospital or healthcare centres;
- Hospitalisation;

- Supporting primary care in the early hospital discharge and, where appropriate, at home hospitalization;
 - Prescription and implementation, where appropriate, of diagnostic and therapeutic procedures;
 - Palliative care for terminally ill patients;
 - Mental health care;
 - Rehabilitation in patients with recoverable functional deficit;
- D. Emergency care
- E. Orthoprosthesis provision
- F. Pharmaceutical provision
- G. Provision of dietary products
- H. Provision of medical transport

SOCIAL SERVICES ADDRESSED TO ELDERLY PEOPLE

The portfolio of social services addressed to elderly people in the Valencia Region are the following:

A. Home care at home

- Tele-care
- Public service of support at home

B. Day care services

- Housing for elderly people
- Day care centres for dependent elderly people

C. Services of residential care

- Nursing homes
- Housing for elderly people

Table 2. Availability or use of social services for elderly people at the Valencian Community

SERVICES	Nº of attended users	Coverage rate	% of people 80+	% people living alone	Average age	Public price per year and user
Tele-care	52.702		45%	57%	80	
Support at home	20.998	2,34	45%	22%	80	139,76 € (Price per month and user)
Other care services at home:						
- Meals	4.540					1.992,00 €
- Laundry	540					2.364,00 €
- Support for family and dependency	500	44,62				959,13 €
- Housing adaptation	212					1.047,00 €
- Technical aids	1.081					
Housing for elderly people	400.000					
Day care centres for dependent elderly people	16.018		59%		81	10.692,00 €
Residential services						
- Nursing homes	32.837		74%		84	22.392,00 €
- Housing for elderly people	70 (plazas)					

Geriatric care in the Valencian Community exists only in a few healthcare centers. At the Valencian Community level, a Care Plan for older people and chronic patients was designed but it presents several problems. For example in the framework of this Care Plan, consulting teams were created (which have only demonstrated being beneficial supporting Traumatology) rather than Acute Patients Units or Functional Recovery Units (which have shown a greater benefit for these patients). **Geriatrics is not included in the portfolio of specialties of the Ministry of Health of the Valencian Community.** And there are only four geriatric job vacancies at the Valencian Community level. It can be said that Geriatrics, being a young specialty, is growing unevenly and this entails that there is **no universality and equality in the specialized care for older people.**

3.1.2.3. Hospital care management

Patient hospital admission

People aged >75 can be admitted to a hospital through emergency departments or through a medical consultation if it is a programmed admission. In the medical area, most of the admissions (around 90%) are urgent. In the surgical area, 2/3 admissions are programmed for some intervention; and 1/3 are because of a surgical emergency. For example, at Hospital La Fe in 2014, there were 10631 admissions of which 28.9% were from people over 75 years.

Regarding home hospitalization, the service or department in charge of the patient can request the patient's hospitalization at home if they consider that the treatment can be given at home. Home hospitalization care is offered by some health department, but not all. And usually are public's hospitals which provide this kind of care.

Inpatient care & discharge

Hospital care of elderly patients is the responsibility of the medical team who is taking care of them. The medical team is composed of doctors and nurses. Also nursing assistants provide care to patients under the direction of a nurse or a doctor. Moreover, although elderly patients receive every kind of care by professionals at hospitals (by doctors, nurses and assistants) it is necessary (or recommended) to have some relatives or friends taking care of them, in order to better monitor them.

At the Hospital de La Ribera there is a Geriatric department composed by 5 geriatricians who take care of elderly patients in both the medical area and the surgical area. The average age of patients who are referred to Geriatric department at the Hospital de La Ribera is 84 years. Besides the Geriatric department, at the Hospital de La Ribera there are other departments or units from which elderly patients may benefit, such as: a Unit of Acute Medicine, Unit of Orthogeriatrics, Unit of Mixed Functional Recovery, Unit for Acquired Brain Damage, Unit of Home Hospitalization, as well as specific Geriatric programs.

At Hospital Universitari i Politècnic La Fe there are also specific programs which are mainly aimed at older people. For example, chronic patients program in which most of the patients are over 65. This hospital also have home care and a telecare service.

Regarding the average hospital length of older patients, the Hospital Universitari i Politècnic La Fe presented an average of 6.33 days in 2014, while for the Hospital de La Ribera was 4.5 days. But it depends of the diagnoses and processed attended.

About hospital discharge, professionals in charge of the patient's care are responsible for the patient's discharge or transfer. The discharge is decided when patient is considered stable enough to continue the recovery at home or at another setting. However, in some cases are patients who request the voluntary discharge. In this case, the patients must sign a written consent and a document that exempts the hospital from responsibilities by the decision taken by the patient.

After discharge, usually patients go home. In the event that the patient needs a specific care and the person does not have sufficient resource (economical, familiar, rehabilitation equipment, etc.), the patient can be admitted in a public nursing home after a previous application to the Regional Social Services Department. However, the discharge to a nursing home only affects about 1% of older patients.

It must be highlight that some hospitals, not many, are coordinated with primary care and social care in order to provide an integrated care. This integrated care is usually based on case-management from a multidisciplinary approach.

Open issues

Main problems:

- To avoid the disability resulting from the hospitalization and its consequences: decrease of quality of life, mortality, re-admissions, admissions to nursing homes, high consumption of resources and high health and social costs.
- Usually, complex older patients are treated as suffering a single pathology and not taking into consideration the complex situation related to multimorbidity. Health professionals prioritize the main diagnosis instead of providing a comprehensive care. And the main problem related to this is that there is not coordination between the different medical specialists in order to achieve an individualized and integrated therapeutic approach.
- Frailty is not usually taken into consideration by health professionals.
- Lack of attention to the older people social needs which have an impact on health.

- Complication of geriatric conditions among older patients due to risk factors related to ageing or improper habits and daily routines. In this regard, care plans and prevention awareness campaigns have been developed in order to promote self-care.

Main challenges:

- The main challenge is the development of specialized geriatric services. For this aim, more geriatricians are required, as well as more geriatric departments at hospitals/healthcare centers.
- Another important challenge is to implement the assessment and intervention of frailty at the primary and specialized care levels in order to prevent disability among older patients.
- It is also necessary to develop more programs aimed to chronic patients at both primary and specialized care levels.

Best practices (local and national) for hospital care management

There are many guides of good practices based on scientific evidence. For example, at the Sociedad Española de Geriátría y Gerontología website (<https://www.segg.es/>) and at the Sociedad de Medicina Geriátrica website (<http://www.semeg.es/>).

There are also several geriatrics journals (for example: Journal of the American Geriatrics Society; Journal of Gerontological Nursing) where many systematic reviews and meta-analysis about the benefits of specialized care for elderly people are available. In some of these studies the effectiveness and efficiency of this specialized care in geriatrics is shown.

3.1.2.4. Continuity of care after discharge

Continuity of care flow

After hospital discharge, the GP at primary care level is in charge of monitoring the patient's recovery. The first visit to the GP after discharge must be requested by the patient, as it is considered the patient's responsibility. And it is recommended within 7 days after discharge. The frequency of the following visits to the GP depends on the patients' medical conditions.

Health professionals at the hospital usually do not contact other healthcare providers involved in the patient's care. Instead of that, they include all the patient's medical information related to their specialty into the electronic medical record (Abucasis system and SIAS). In that way, other

professionals (GP, other medical specialists) have access to the data. But there are some exemptions, for example the professionals at the Hospital de La Ribera contact other healthcare professionals involved in the patient's care in order to provide a more comprehensive care. But generally, social care is not coordinated with healthcare, although there are social workers in hospitals and primary care centers. Those social workers are responsible for identifying the social needs of patients. At the Hospital La Fe, it has been some initiatives about integration of social and health services but currently there is not integration of social and health care yet. At the Hospital de La Ribera, there is an initiative based on multidisciplinary meetings which are carried out occasionally with social and health care centers from the same health department.

Regarding hospital readmissions, at the Hospital la Fe, 6605 patients over 75 were admitted in 2014; 1.8% of them were re-admitted 72 hours after discharge and 11.4% after 30 days. At the Hospital de La Ribera the re-admission rate is lower than 10%; and from those attended at the Geriatrics department is about 6-7%.

Integration between hospital and territorial care services

Territorial care services in Valencia depends directly of the Under-Secretariat of the Regional Ministry of Health (Subsecretaria de la Consellería de Sanidad Universal y Salud Pública de la Comunidad Valenciana), in which processing services and administrative management are provided.

At the Hospital de La Ribera, at territorial level there are social and health care meetings between the different health and social services and municipal entities from the same Health Department. There are also meetings between prevention and attention health services from the same Health Department. At the Hospital La Fe the coordination between territorial care services and the hospital is based solely on administrative management.

At the Hospital de la Ribera there is a case-management initiative in which GPs, other health professionals, as well as social services are involved. At the Hospital La Fe there are several experiences of case-management, from which are Home Care and Telemedicine have emerged. Currently in this hospital, there are about 900 patients in a case-management program for chronic patients.

Continuity of care networks (informal of formal)

There are different kinds of care networks in the Valencia Region. Some of them are public and others are private or based on volunteering. Moreover, there are networks of formal and informal caregivers offered by local associations, such as housewives association or associations of relatives of Alzheimer patients. For example, the Valencia association of relatives of Alzheimer patients organizes annual meetings and collaborates in multiple training workshops organized by the Geriatrics department at the Hospital de la Ribera. This is an example, that it is possible to connect all this kind of associations with geriatrics services and hospitals.

Open issues

The ageing of the population is related to an increase in the use of health resources. In this regard, prevention and action plans, as well as early intervention, are required to achieve a healthy ageing and to avoid disabilities and health conditions. It is important to encourage initiatives and measures aimed to promote physical exercise, education in nutrition and cognitive training in order to prevent frailty and disability and its consequences in people's quality of life

3.1.2.5. Prevention activities

Prevention initiatives

Early detection of frailty is not performed outside the field of Geriatrics. Only the hospitals that have a geriatric department, as well as some primary care centres, use a comprehensive geriatric assessment (CGA). In the health services linked to a geriatric department, the GPs (at primary care level) evaluate an older person's functional ability, physical health, cognition and mental health, as well as social circumstances. At hospital level, the geriatric assessment happens when an older patient enters the emergency room of the hospital.

There are no different kinds of CGAs, only one kind of assessment which is applied to ALL older patients with no distinction among the different conditions that older patients may present. The assessment of these conditions (polypharmacy, physical health, cognition and mental health and social circumstances) are part of the CGA that is being applied.

In addition to primary care and hospitals with a geriatric department, other medical specialties such as Family and Community Medicine and Internal Medicine are now initiating an approach to the detection of frailty. Also, Anaesthesiology and other surgical specialties, because they have realized

that patients with fragility have a worse prognosis. So, considering the progression of the use of CGA, in a few years almost all medical specialties will be using the CGA when dealing with elderly patients.

Open issues

The main challenge is to prevent functional decline during hospitalization because it occurs frequently (1 out of 3 older patients who are hospitalized present functional decline after the hospitalization). Another challenge is to develop an adequate management of patients with multiple chronic disease and geriatric syndromes because the current one is not holistic and usually don't include the prescription of prevention activities. Regarding this issue, for example, doctors, in some cases, should prescribe physical exercise to this kind of patients but they don't do it, even being one of the most powerful prevention activities.

One of the main problems regarding the lack of prevention of functional decline is the increase of the number of visits to the hospital and primary care. Also, it can be related to a complication of the comorbidity that usually is present in older patients.

Best practices (local or national) for prevention

There is an 'Agreed document about the prevention of frailty and falls in elderly people. Strategy for Health Promotion and Prevention of the Spanish Healthcare Systems' approved by the Inter-territorial Board of the National Healthcare System in 2014. Its objective is to detect and intervene under frailty and risk of falling in elderly people as a method to avoid and/or delay functional decline, as well as to promote health in 70+ elders. For this purpose the development of a common basic protocol for the National Healthcare System is proposed covering the screening of frailty/functional decline and the risk of falling associated to the preventive intervention specific for elders at primary care level. The scope of activity is primary care services and the community in coordination with the convenient specialized geriatric and hospital resources.

3.1.2.6. Data integration

General information flow & level of interoperability

Electronic medical records (EMR) include both patient's sociodemographic data and patient's medical history (tests, medication, etc.). Only healthcare professionals (at hospital and primary care level) involved in the care of the patient can edit the patient's EMR. GPs at primary care have more

control over the EMR because they are in charge of monitoring the patient and they are the ones that collect all information (from nurses, specialists etc.).

Nurses who can edit the EMR (for example recording the results of some medical tests), have only limited access to the EMR, as well as social workers at the healthcare centre. The EMR software that is being used is not always the same. For example, the doctors at the hospital Universitario y Politécnico La Fe use the ORION program, while the primary care doctors use the ABUCASIS program. Both programs are connected but ABUCASIS users cannot edit the medical record in ORION, and vice versa. So, sometimes some information is lost.

Data workflow hospital care

At hospital SIAS (Sistema Integrado de Atención Sanitaria – Integrated System of Healthcare) is used; in primary care Abucasis is used; and in social and health care Resiplus is used. GPs and doctors from hospitals can access to SIAS and Abucasis. Some doctors at specialized care levels and at nursing homes have access to the corresponding part of their patients at SIAS or Resiplus (for example, in patients admitted at the Unit of Functional Recovery).

Patients' health data is integrated with administrative, economic and management services of the Healthcare System. The coordination of the electronic clinical history is at institutional level and is carried out by a corporative project of the Regional Ministry of Health of Valencia (Conselleria de Sanitat). The access to the clinical electronic history is possible through an individual accreditation by the medical and administrative team. Every professional at the hospital only has access to his/her corresponding part of the clinical history. It is comprehensive record where it comprises every assessment, tests and results carried out by any professional at the hospital.

Doctors and nurses have access to the clinical history of every patient of the Valencia Region where Abucasis is used. Doctors have access to the complete version of the history of every patient; nurses have only limited access.

Data workflow continuity of care

Clinical data is managed in a centralized way by the Regional Ministry of Health of Valencia, and the SIP (Sistema de Información Poblacional – Population Information System) Office is in charge of the management of patients' data at administrative level.

Accessing the patients' data is restricted to the medical team who attends them and to the administrative structures of the hospital. The staff has access to specific parts of the patients' data according to their professional profile.

Every access to the history of a patient is registered and, of course, it is taken into consideration the Law for Protection of Personal Data (Ley Orgánica 15/1999, de 13 de diciembre, de Protección de Datos de Carácter Personal).

Open issues

In the Valencian Autonomous Community there is a great integration of almost all clinical data at different levels of health care of patients in almost all centres, and many efforts are put in achieving complete and effective integration. The main challenges in relation to the integration and management of clinical data are of legal nature and usually the patient represents the weakest part and is thus unsecured.

With regard to the care delivery to elderly patients and data integration, the greatest challenge is to enable the effective integration of training and information and to accelerate the social procedures in cases of disability, incapacity or dependency to make social resources available as fast as possible for the people who need them.

Best practices (local or national) for data integration

There is legislation on data integration, which makes solving the problems most complex and slow. This legislation intends to fulfil principles of good practice, however there are differences in patient's care between the different autonomous communities, even between the healthcare centres or hospitals from the same health department. For example: there are municipalities that have 7 home care medical assistants while other municipalities only share one, and thus have insufficient home care.

3.1.3. Current situation analysis the Netherlands – Rotterdam

3.1.3.1. Healthcare system profile the Netherlands

Organization of the healthcare system

There are several segments in the Dutch health care system:

- Primary care in the Netherlands has as variety of healthcare providers, such as GPs, pharmacist, physiotherapists, psychologists and midwives. In the Dutch healthcare system, the general practitioner (GP) has a unique and central role as ‘gatekeeper’ to hospital and specialist care (with the exception of emergency care), which is only accessible upon referral from a GP. Emergency care is provided by GPs, out of hours-services, emergency wards and trauma centers (Schäfer et al., 2010).
- Secondary care includes those types of care that are only accessible upon referral from a primary care provider, such as a GP, midwife or dentist. These types of care are mainly provided by hospitals or mental health care providers.
- Long term care is provided both in institutions (residential care) and in communities (home care). Residential care consists of nursing homes and residential homes, which differ in the level of medical care provided. Home care is provided by home care organizations, residential homes and nursing homes. Besides from these formal types of care, there are services provided by informal carers.

Accessibility of care

Accessibility is one of the main qualities of the Dutch healthcare system (Van den Berg et al., 2014a). Compared to many other countries, most services are within easy reach. Health care resources have a well-balanced geographical coverage with a general practitioner, physiotherapist or midwife generally to be reached by car within a few minutes, and a car journey to a hospital rarely taking more than half an hour. Differences in accessibility between demographic or socioeconomic groups also appear to be limited. The system is also accessible from a financial perspective; there is a broad basic benefits package under which practically all residents of the country are insured for health care costs. Co-payments are amongst the lowest in the OECD countries (Van den Berg et al., 2014b). Whereas until recently, there were only few people in the Netherlands who decided to forego curative health care for financial reasons, the tide now seems to be turning. Possible explanations lie in the increases in the compulsory health insurance excess, the lower numbers of people who

purchase supplementary insurance cover, and the effects of economic recession (Van den Berg et al., 2014a).

Quality of care

Compared to other affluent countries, the Netherlands scored above average on the majority of indicators of the Organisation for Economic Co-operation and Development (OECD) (Van den Berg et al., 2014a). However, for specific aspects results of the Dutch system varied. On some indicators, the Netherlands ranked amongst the best-scoring countries: it had the lowest volume of primary care antibiotic prescription and a higher 48-hour surgery rate for hip fractures in comparison with many other countries. Scores on other indicators were less positive, including higher than desirable rates for mortality following strokes or acute myocardial infarctions and for perinatal mortality (Van den Berg et al., 2014a).

Affordability of care

Health care expenditures in the Netherlands have increased spectacularly in the past decades. The high and rising expenditures are the most important challenge for Dutch policy makers (Van den Berg et al., 2014b). Whereas health care expenditures continue to rise, they have, however, stabilized slightly since 2011 (Van den Berg et al., 2014a). Within Europe, the Netherlands is still one of the countries with the highest health care spending as a percentage of the gross domestic product; this is attributable mainly to the costs of long-term care (Van den Berg et al., 2014a).

Coordination of care

In the Netherlands, the general practitioners (family physicians) have a key role in the coordination of (medical) care; they do so in close collaboration with the medical specialists and nurses in the hospitals in their care area. So, (medical) care before a necessary hospital admission is coordinated by the general practitioner, but also the (medical) care after leaving the hospital. Every citizen is registered as a patient of a general practitioner, who generally closely collaborates with a staff of well-trained medical support personnel, nurses and nurse practitioners, and other health and psychology professionals (e.g. psychologist, physiotherapist). In the hospitals, older patients with complex conditions or circumstances may be supported by the geriatric department/team to promote coordination of care. The medical specialists, nurses, and geriatric health professionals in the hospitals closely collaborate with the team of the general practitioner to prepare for dismissal; or with a nursing home or revalidation facility when this is needed.

On another level, also the municipality where the patient lives, has an important role with regard to coordination of care. In addition to the private health care insurance that is obligatory to have by law, and that is subject to government regulation, funding of medical and social care costs (not health care) is regulated by the Law on Societal Support (Wet Maatschappelijke Ondersteuning; WMO) that has appointed the municipality as the responsible authority for the funding of, but also coordination of care (not medical or strict health care). Examples are all facilities like nursing or household support, or home adaptations that are needed for the older citizen to be able to live at his/her own house.

To support this, many municipalities have organized (or are going to organize) 'social teams' that can visit citizens and discuss at their 'kitchen table' how support can be organized and provided; preferably by the own social and informal network.

3.1.3.2. Pilot site profile Rotterdam

Geography

The city of Rotterdam is located in the South Western part of the Netherlands and is the second-largest city in the Netherlands. It is the capital of the province South Holland and is located geographically within the Rhine–Meuse–Scheldt river delta at the North Sea.



Local economy

The Gross Regional Product of the greater Rotterdam region is €53.457 million. The Port of Rotterdam is the largest in Europe and the fifth largest in the world. Rotterdam's port is the gateway to a European market for 500 million consumers and the direct gross added value of the port and industrial area is 9,900 million euros.

Population/Demographics

Rotterdam has a population of approx. 625,000 inhabitants. The majority of the population (69%) is aged between 15-64 years old. Fifteen percent is aged >65 years. Both 37% of the Rotterdam population is semi-skilled as well as highly skilled. Twenty-five percent of the population is low-skilled.

In the Netherlands, Rotterdam has the highest percentage of foreigners from non-industrialized nations. 167 different nationalities live in Rotterdam. They form a large part of Rotterdam's multi ethnic and multicultural diversity. 47.7% of the population are of non-Dutch origins or have at least one parent born outside the country.

Health and social care structures

The city of Rotterdam includes six different hospitals. One academic (Erasmus MC) and five general ones (Havenziekenhuis, Ikazia Ziekenhuis, Maasstad Ziekenhuis, Het Oogziekenhuis Rotterdam and Sint Franciscus Gasthuis). Hospitals. The Erasmus MC is the largest hospital and includes about 800 beds. Rotterdam includes 164 general practices with a total of 311 general practitioners. The small, neighbourhood oriented Havenziekenhuis (former Harbour hospital) is an independently operating hospital for general medical problem, including geriatric problems among older patients, but is officially part of the Erasmus Medical Center.

As stated above, in the Netherlands, including Rotterdam, has a high profile and high quality network of primary health care centers ('gezondheidscentra'). General practitioners (family physicians) have a key role in these centers. Every citizen is registered as a patient of a general practitioner, who generally closely collaborates with a staff of well-trained medical support personnel, nurses and nurse practitioners, and other health and psychology professionals (e.g. psychologist, physiotherapist).

Besides the health care centers, all neighborhoods also have social centers that are funded by the municipality/city. Social centers may provide practical support like financial benefits, finding or adapting a house, and may provide day time (social) activities.

Social centers and health care centers are collaborating, and are increasingly co-located in one building. This movement towards integrated social and health care centers is the purpose of the EU-funded project Urban Health Centres (www.uhce.eu), in which both the city of Rotterdam, and the city of Valencia participate.

After hospital admission, a patient may be indicated to receive support of a revalidation center (in-patient or out-patient). Or the patient may be admitted to a nursing home (medical or psychogeriatric). In the recent past, there were also special living facilities for older citizens with minor medical and social support. However, these do not exist as such anymore. There are however general housing facilities (e.g. apartment buildings) that focus on 55+ citizens as inhabitants. The current policy is that as long as a citizen is not eligible for hospital or nursing home admission, he/she receives all social and medical care needed based on the WMO law, in the own house (Law on Societal Support = Wet Maatschappelijke Ondersteuning; WMO).

3.1.3.3. Hospital care management

Patient hospital admission

Each year, approximately 4.000 elderly patients (>75 years) are admitted to the Erasmus MC in Rotterdam. The way elderly patients are admitted varies per department and ward. The majority consists of elective admissions; the remaining part is admitted through the emergency room (ER) department. Elective admissions of elderly patients are mostly diagnostic-related (when before and after support is needed) and surgery-related admissions (major cardiac or gastrointestinal surgery). Most elderly patients that have been referred through the ER are patients with acute medical problems (e.g. heart problems, dehydration, infections, delirium). The Erasmus MC does not perform (it is a choice) much orthopedic-geriatrics surgery; hospital admissions relating to hip fracture are only 30-40 per year. The above mentioned general hospitals such as the 'Havenziekenhuis' provide the care for such patients.

Inpatient care & discharge

Most elderly patients are followed by the specialism responsible for the admission. In case a consult of a geriatrician is required, the geriatrician will also be involved in the diagnostics and treatments. When patients are admitted at the ward of Geriatric Medicine they receive dedicated multidisciplinary care. The average length of stay at the ward of Geriatric Medicine is 7.6 days. Approximately 50% of the patients admitted to the ward of Geriatric Medicine is discharged to go home. Alternatively, they are discharged to nursing homes for rehab programs (short stay), for long term care, or for palliation. The mortality rate is relatively low (8%).

Open issues

One of the main problems encountered in the Erasmus MC regarding hospital care for elderly patients is the discharge to nursing homes, which sometimes can be time and energy-consuming. Compared to five years ago, however, it seems to get easier.

Best practices (local and national) for hospital care management

In the Netherlands *a plan has been developed for the early identification and early treatment of frail elderly patients* (<http://www.vmszorg.nl/themas/kwetsbare-ouderen>). This program aims to avoid (unnecessary) functional decline in elderly patients which is related to complications during their hospital stay. Hospitals have to provide optimal care to elderly patients, consisting of efficient and early recognition of functional decline, followed by appropriate and effective interventions. The following interventions may be used in the hospital:

- Screening interventions to detect/identify an increased risk of delirium, falling, malnutrition and existing physical problems/handicaps.
- Preventive and treatment interventions to directly target one of the four presented geriatric problems.

A related best practice is the multidisciplinary *guideline on Delirium– CBO, 2013*.

3.1.3.4. Continuity of care after discharge

Continuity of care flow

The majority of discharged patients is seen again at the outpatients' clinic. The frequency of controls varies from every 12 weeks to one a year. In case patients are discharged to nursing homes, the nursing home doctor will take care of the follow up. In case of a discharge to home, the general practitioner (GP) will arrange the follow-up.

The GP or practice nurse specialized in care for elderly patients, visits (frail) elderly patients after being discharged from hospital. The aim of this visit is to assess the situation and to see whether the patient is receiving appropriate home care. Particularly, the efforts of neighborhood oriented nurses for home care ('wijkverpleging') are important. These 'social nurses' can be part of a primary health care center, but are more often employed by a general care agency. Usually this is arranged by the hospital, but not always adequately. In addition, the medication that has been described by the hospital is checked. If necessary the GP or/practice nurse contacts the treating specialist for advice.

Follow up is arranged by primary care providers, without 'interference' of the hospital. Readmission can occur if the patient's situation get worse or if a new indication for admission arises. Hospital readmission rate is approximately 5%. Readmission takes place by referral of the GP, in some cases via the ER (in out of business hours).

Relatively seldom, a patient after discharge is indicated to a revalidation center (in-patient or out-patient), or to a medical or psycho-geriatric nursing home.

Integration between hospital and territorial care services

In the Netherlands Territorial Care Services only exists to a small extent, with a main focus on prevention. The link between hospital care and primary care is coordinated by the GP. In some cases the GP acts as a case manager regarding the care of the patient at home. In other cases (e.g. Dementia in own home) other healthcare providers (e.g. neighborhood oriented 'social' nurses for home care; 'wijkverpleging') act as case manager. Case management is almost always arranged for patients suffering from dementia.

The GP and the 'social' neighborhood nurse coordinate the home care provided to elderly patients and the link with the care provided by the hospital. The specialist coordinates the care provided by

the hospital and does not 'interfere' with the care provided in primary care ('first line care'; 'eerste lijn').

Continuity of care networks (Institutional and informal)

In Rotterdam, as in most other (parts of) municipalities or other clearly defined areas, (In)formal Geriatric Networks often exist, which focus on all aspects of the care of elderly patients. The composition of the network depends on the particular location and the available services. General practices, 'social' neighborhood nurses, nursing homes and local hospitals are generally included, complemented with social work.

The main purpose of these networks is exchanging experiences and information and creating (work)arrangements, mostly regarding communication between the involved caregivers and the exchange of patient information.

In addition, there are several patients' or caregivers' networks (e.g. Alzheimer's caregivers, on national and local level with Alzheimer's café for caregivers and patients).

Open issues

The main challenge with respect to continuity of care for elderly patients is to coordinate the care, particularly when several echelons are involved in the care process (e.g. primary care, hospital care). This can even be more challenging as a result of the increased role of informal caregivers and the patient's own network of care. Coordination and communication may then become even more complex.

In addition, the lack of clear communication among different specialists treating the same patients for different problems (eg Cardiologist and OTN) with sometimes not completely correct information on medications and/or decision making.

Best practices (local and national) for continuity of care/coordinated care management

An example of a best practice is appointing a case manager, from the general practice or from a specific care area such as dementia. These best practices are performed at several places in the Netherlands, among which Rotterdam.

Another example of a best practice is the development of (mono or multidisciplinary) guidelines such as the CBO guideline delirium (2013) (see: <https://www.ntvg.nl/artikelen/richtlijn-delirium>).

3.1.3.5. Prevention activities

Prevention initiatives

Apart from some specific areas (e.g. dementia, polypharmacy and fall prevention) the structured use of CGAs in the Netherlands, although increasing, is still in its infancy. Structurally assessing the needs of frail elderly people and translating those in individualized health programs is financially supported by (some) Dutch health insurance companies. Some healthcare centers/group practices with a high proportion of elderly patients focus on frail elderly patients by detecting them at an early stage, following them and provide appropriate care if needed. Home visits play an important role in this respect, as these can provide adequate impression of the functioning and habitat of frail elderly people.

Open issues

There are several problems with respect to (a lack of) prevention of functional decline and readmission for elderly patients. First, there is a lack of financial resources to perform these activities at an adequate quality level. Another problem is that not all frail elderly people are willing to cooperate in activities or programs related to prevention, such as fall prevention. They do not consider them to be useful and accept the as normal hazards belonging to getting older. Third, due to a lack of prevention some patients are sent too late to the Geriatrician. In this case, considering the chronic and progressive nature of cognitive and consequential functional decline, a delay of consultation can be a kind of cause of virtual accelerated decline.

Best practices (local and national) for prevention

An example of a best practice is the fall prevention programs which are executed at several places in the Netherlands, among which Rotterdam.

In addition, the 'Polypharmacy for the Elderly' guideline and the STRIP (Systematic Tool to Reduce Inappropriate Prescribing) program are best practices aimed at avoiding the negative effects of polypharmacy. General practitioners can limit the risk of adverse effects by following the recommendations of the 'Polypharmacy for the Elderly' guideline (NHG, 2012). In addition, GPs can work with pharmacists to provide integrated pharmaceutical care by systematically evaluating the

medicines prescribed using the stepwise approach of the STRIP (Systematic Tool to Reduce Inappropriate Prescribing) (Leendertse et al., 2012).

3.1.3.6. Data integration

Information flow & level of interoperability

Data workflow within hospital care

In hospitals such as the Erasmus MC one computerized data system is used for all patient data and by all involved healthcare providers. Data are private and can only be seen by the involved health care professionals. Different healthcare professionals do not have, or have only limited access to each other's files. The treating specialist manages the patient file. Exchange of information is done by (electronical) letters and edifact messages, of which the latter can be included in the patient file. Access to patient data is based on authorization, in which only persons involved in the care/treatment of the patient have access to (part(s) of the patient file. Depending on the authorization one can only read or also adjust/add patient information to the file.

Data workflow continuity of care

Similarly, in Dutch primary care practices/group centers one information system, i.e. electronic health record system (EHRS), is being used. However, 7 different types of EHRs are available in Dutch general practice. Only the GP and nurse practitioners have access to the patient file. The GP manages the file and information is added by the GP or the nurse practitioners, complemented with information received of third parties.

'Social' neighborhood nurses have their own patient file information system.

The different systems being used are not linked to one another and healthcare providers do not have access to each other's systems, nor do patients.

Open issues

The main problem is the lack of clear communication among different specialists treating the same patients for different problems (e.g. Cardiologist and OTN) with sometimes not completely correct information on medications and/or decision making. There is a strong need for the exchange of

information and the linking of (parts of) systems to one another. Currently, things are often not done efficiently and, duplication of efforts, particularly regarding diagnostics, is often observed.

Best practices (local or national) for data integration

In the region Amsterdam-Almere a group of healthcare providers is using a decentralized web-based application called Whitebox, in which health information can be shared with different types of healthcare providers in primary care, whom in turn, can also add information. The GP and the patient own the patient file and can determine which information they want to share with whom. Whitebox is said to guarantee protection of privacy of patients. This may be a useful approach, in which, based on current systems, a link is established between the different information sources.

3.2. Analysis of best practices outside the partnership

In this section, international best practices or best practices outside the partnership are presented. They focus on hospital care, continuity of care, prevention and data integration.

Hospital care

Similar to the counties of the pilot sites, international guidelines exist regarding the care for elderly patients, as established by European or worldwide professional organizations. In addition, at the websites of the International Association of Gerontology and Geriatrics (IAGG), the European Union of Geriatric Medicine Society (EUGMS) and at the American Geriatrics Society (AGS) we can find many clinical trials, systematic reviews and meta-analysis.

Continuity of care/coordinated care management

Regarding continuity of care, there are also several disease-specific guidelines or chapters of books that specifically focus on the care for elderly patients (e.g. guidelines hypertension, chapter hypertension in the elderly). Some guidelines are age-specific, e.g. the AGS/BGS Clinical Practice Guideline: *prevention of falls in older persons, 2001*.

http://www.americangeriatrics.org/health_care_professionals/clinical_practice/clinical_guidelines_recommendations/prevention_of_falls_summary_of_recommendations. Similarly, there are some clinical trials published and some systematic reviews related to, for example, telephonic monitoring after discharge or consulting teams.

Prevention

Regarding the prevention of functional decline and readmission for elderly patients, there are several international initiatives on polypharmacy, such as The Scottish Polypharmacy Guidance document (2015), as well as systematic reviews on polypharmacy, such as 'Polypharmacy in elderly patients' Hajjar, et al (2007). In addition, there are tools available for screening, such as the Beers (American Geriatrics Society; 2012) and the STOPP criteria, Screening Tool of Older Persons' Potentially Inappropriate Prescriptions (Gallagher et al., 2008).

Another best practice is the *Urban Health Centres project (UHC)* (<http://uhce.eu/>) which is a three-year European research project which started in January 2014. It promotes innovative integrated health and social care pathways, early detection of frailty, management of polypharmacy and the prevention of falls for active and healthy ageing in European cities. The project adopts a user-centred approach and puts older citizens and patients at the center of care.

Data integration

A best practice related to data integration is the *Smartcare project*. This European Commission project runs from 2013 until 2016 and aims to deliver integrated eCare services in the community, joining in a better way health, social and informal care service provision thanks to the support of information and communication technology (ICT). This is also expected to enhance self-care and empowerment of care recipients and their relatives. Based on supportive informatics solutions, integrated home care services are defined, implemented and deployed in nine European regions until summer 2016. Two general care pathways have been developed: a long term care pathway for chronic home care and a care pathway for care at home after discharge from hospital.

4. Conclusions

The study described in this report includes a local situation analysis of the three pilot sites regarding the management of frail elderly patients. In addition, best practices in and outside the partnership were studied. Based on this conclusions are formulated regarding the three levels of interventions (hospital care, continuity of care and prevention) and data integration. The main challenges and best practices reported in one section may apply to other sections as well.

With regard to **hospital care management** of frail elderly patients, the main challenges perceived are:

- The lack of a standardized and appropriate assessment of the status of the elderly patients when admitted to hospital.
 - o The use of geriatric assessment instruments that can analyze comorbid, assessment of the cognitive condition preceding the illness that causes the entry to the ED, assessment of the functional pre-morbid condition is not standardized.
 - o Usually, complex elderly patients are assisted as if they just have a unique pathology and complex situations (e.g. multimorbidity) are not taking into account. Professionals prioritize the diagnosis and care based on the seriousness of complaints, rather than providing comprehensive care. Frailty is not usually taken in consideration.
 - o There is an absence of clear or shared criteria according to which patients are sent to different levels of care such as the Internal medicine ward or Short-term Assessment Unit.
 - o There is a lack of coordination between the different specialists treating the same patients.

Best practices that were reported to address these problems are:

- o The use of geriatric assessment instruments that can analyze comorbid, assessment of the cognitive condition preceding the illness that causes the entry to the ED, assessment of the functional pre-morbid condition.
- o In order to assess, identify and intervene the frailty of elderly patients adequately and to avoid disability, several initiatives exist such as the Dutch initiative *VMS 'Frail Older Citizens (Kwetsbare ouderen)'*. This program aims to avoid (unnecessary) functional decline in elderly patients which is related to complications during their

hospital stay. Hospitals have to provide optimal care to elderly patients, consisting of efficient and early recognition of functional decline, followed by appropriate and effective screening and preventive and treatment interventions.

- Another best practice mentioned is to arrange for special departments in the hospital, such as the Geriatrics Short-term Assessment Unit in Treviso hospital, which is accessible from Monday to Friday, 8 am - 7.30 pm, and is based on a multidimensional assessment. The aim of this unit is to achieve quick diagnostic and therapeutic procedures, with good results for the patients. In this way, admissions can be reduced, especially the inappropriate or useless ones, thus offering quality and comfort to the patients who are undergoing analysis or treatments, and reducing the negative effects of a prolonged hospital stay.
- In addition, it is recommended to use systematic reviews, meta-analyses and clinical guidelines related to specialized care for elderly people, which can be found at several websites such as the International Association of Gerontology and Geriatrics (IAGG), the European Union of Geriatric Medicine Society EUGMS) and the American Geriatrics Society (AGS).

With regard to **continuity of care** of frail elderly patients, the main challenges perceived are:

- In general, a constant increase of frail patients needing care, their complex problems, also related to multimorbidity, and the increase of chronic pathologies are perceived as problems. In addition, a poor or absent follow-up of patients is perceived as a problem. This is important for the assessment of the medical conditions and the post-hospital care, but also for the consequences on repeated admissions.
- Another important challenge with respect to continuity of care for elderly patients is to coordinate the care, particularly when several echelons are involved in the care process (e.g. primary care, hospital care). This can even be more challenging as a result of the increased role of informal caregivers and the patient's own network of care. Coordination and communication may then become even more complex. The lack of clear communication among different specialists/healthcare providers treating the same patients for different problems may result in not having completely correct information on medications and/or decision making.

Best practices that were mentioned to address these problems/challenges are:

- *Individualized geriatric care* is an approach that could assist elderly patients in their hospital path and direct them towards the post-hospital phase. The complexity of cases and of care networks built around the patient calls for an increase of forces at territorial level in order to facilitate cooperation among operators. An example of a best practice in this regard is COT (the Territorial Operative Center) which coordinates pre-defined pathways among different services/units/operators. COT basically manages in a rational, transparent and controlled way all the flows from hospital wards, through the coordination of Protected Discharge/Protected Admissions, in order to lead the patient in the complex assistance pathway; it protects the transfer from a healthcare unit to another, and from an assistance level to another, collecting in an organized way all the opportunity offered by the welfare system.
- Another important task of the COT is the ease of the information exchange between the LHA9's internal professionals as well as GPs or other accredited professionals on the procedures to assist and take in charge complex situations. The main challenge will be the standardization of this information system to all chronic patients. The new organizational model based on the COT services may represent a good starting point to reach this goal.
- Another best practice to tackle coordination issues is *appointing a case manager*, from the general practice or from a specific care area such as dementia. These best practices are performed at several places in the Netherlands, among which Rotterdam.
- Regarding continuity of care, there are also several disease-specific guidelines or chapters of books that specifically focus on the care for elderly patients. Similarly, there are some clinical trials published and some systematic reviews related to, for example, telephonic monitoring after discharge or consulting teams.

With regard to ***prevention of functional decline and readmissions to hospital*** of frail elderly patients, the main challenges perceived are:

- The absence of links between prevention and hospital/territorial settings: for instance, the indication of prevention actions are not standardized in the hospital discharge protocols. Apart from some specific areas (e.g. dementia, polypharmacy and fall prevention) the structured use of CGAs, although increasing, is still in its infancy.
- Another challenge is to provide adequate care to elderly patients with multiple chronic diseases and geriatric syndromes. Currently, disease-specific rather than holistic care is provided, and this usually doesn't include activities related to prevention. Regarding this

issue, for example, doctors, in some cases, should prescribe physical exercise to patients but despite of being one of the most powerful prevention activities, doctors often don't do it.

- In addition, the lack of financial resources to perform these activities at an adequate quality level is perceived as a problem. Also frail elderly people are sometimes not willing to cooperate in activities or programs related to prevention, such as fall prevention. They do not consider them to be useful and accept them as normal hazards belonging to getting older.

The main best practices that were mentioned to address these problems are:

- The standardized use of the Comprehensive Geriatric Assessment – foreseen in the APPCARE project - offers an opportunity to detect frailty risk factors, giving the chance to suggest and/or perform preventive actions in order to slow the incidence of new morbidities.
- The ageing of the population means an increase in the use of health resources that require prevention and action plans as well as early intervention to achieve a healthy ageing of the population to avoid disabilities and health decompensations. It is important to encourage physical exercise, education in nutrition and cognitive training by healthcare systems or by the different territorial structures with the purpose of avoiding frailty and disability and their consequences in people quality of life. Since 2011 in Italy, a program of tailored exercise prescription for patients with chronic and complicated pathologies (secondary prevention) is active. It is a specialized program which includes an evaluation phase, supervised exercise phase, after discharge exercise phase, follow up phase.
- In addition, there are several international initiatives on the management of polypharmacy available, both in and outside the partnership. For example, in the Netherlands the 'Polypharmacy for the Elderly' guideline and the STRIP (Systematic Tool to Reduce Inappropriate Prescribing) program are best practices aimed at avoiding the negative effects of polypharmacy. In addition, there are tools available for screening, such as the Beers (American Ger.; 2012) and the STOPP criteria, Screening Tool of Older Persons' Potentially Inappropriate Prescriptions (Gallagher et al., 2008).
- Also, there fall prevention programs are an example of a best practice. The programs are executed, for example, at several places in the Netherlands, among which Rotterdam. Also, in Spain there is an 'Agreed document about the prevention of frailty and falls in

elderly people. Strategy for Health Promotion and Prevention of the Spanish Healthcare Systems' which objective is to detect and intervene under frailty and risk of falling in elderly people as a method to avoid and/or delay functional decline, as well as to promote health in 70+ elders.

- Another European best practice is the Urban Health Centres project (UHC) (<http://uhce.eu/>) which aims to tackle all of the above mentioned problems. It promotes innovative integrated health and social care pathways, early detection of frailty, management of polypharmacy and the prevention of falls for active and healthy ageing in European cities. The project adopts a user-centred approach and puts older citizens and patients at the center of care.

With regard to **data integration** regarding the care provided to elderly patients, the main challenges perceived are:

- A lack of data integration within the hospital, between different specialists treating the same patients for different problems (e.g. Cardiologist and OTN). There is a strong need for the exchange of information and the linking of (parts of) systems to one another. Currently, things are often not done efficiently and, duplication of efforts, particularly regarding diagnostics, is often observed.
- Another problem is the lack of integration between hospital and territorial systems which has to be strengthened and extended to other patients' information flows such as accredited medicines, municipalities' social services and residential homes.
- In addition, a lack of knowledge of the level of integration of the software in use by the health professionals involved in the elderly care is observed as a problem. This is particularly true in the hospital setting. On-field training on IT system opportunities should be enhanced.
- Challenges of legal nature are also perceived, with the patient representing the weakest part in most cases.

The main best practices that were mentioned to address these problems are:

- Some important steps have been made towards integration between hospital and territorial systems, in the 'DOGE' project for the creation of a network of services for sharing clinical data for primary care professionals, namely GPs and pediatricians. One of the added values of the experience gained through DOGE can be seen in the

methodology used for drafting the project specifications, both standard and universal that can be applied in other similar contexts.

- Another best practice is the Italian regional Electronic Health Record (FSEr) project which aims to realize the EHR at national level. The Veneto EHR model guarantees the clinical data sharing among all the LHAs and Hospital Trusts aiming at enhancing the healthcare process on a regional basis. The innovation of the model is a complete sharing the whole process with the professionals working inside the healthcare regional system. This will be consistent in giving each citizen the chance to access his/her own data safely, by introducing new management models that guarantee the beginning of innovative paths in healthcare continuity, producing advantages as for efficiency and economic saving.
- In the region Amsterdam-Almere a group of healthcare providers is using a decentralized web-based application called Whitebox, in which health information can be shared with different types of healthcare providers in primary care, whom in turn, can also add information. The GP and the patient own the patient file and can determine which information they want to share with whom. Whitebox is said to guarantee protection of privacy of patients. This may be a useful approach, in which, based on current systems, a link is established between the different information sources.
- Another best practice is the Smartcare project which aims to deliver integrated eCare services in the community, joining in a better way health, social and informal care service provision thanks to the support of information and communication technology (ICT). This is also expected to enhance self-care and empowerment of care recipients and their relatives. Based on supportive informatics solutions, integrated home care services are defined, implemented and deployed in nine European regions until summer 2016.

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Annex 1: Experts in pilot sites

Treviso – Italy

- **Elena Procaccini**, LHA n°9 R&D Unit, Treviso Hospital
- **Stefania Volpato**, Geriatric Unit, Treviso Hospital
- **Kareen Baccaglioni**, Continuity of Care Dept. Treviso Hospital
- **Elio Soldano**, Head of ICT Dept.
- **Enrico Di Giorgi**, Head of Health and Social District "South" (for Continuity of Care Best Practices)
- **Patrizio Sarto**, Prevention Dept. - Sport Medicine Unit (for Prevention Best Practice)

Valencia – Spain

- **Elisa Valía Cotanda**, Health researcher at Polibienestar Research Institute
- **Jose Luis Alfonso Sánchez**, responsible for Preventive Medicine Service at the Hospital General Universitario of Valencia
- **Aina Meseguer Costa**, Nurse at Hospital Quirón Valencia (private hospital) and Hospital Universitario y Politécnico La FE de Valencia (public hospital)
- **Amparo Marco Torres**, GP and medical coordinator at Nou Moles primary healthcare centre
- **Juan Antonio Avellana Zaragoza**, Geriatrician at the Hospital Universitario de la Ribera; in Alzira, Valencia (public hospital with private management)

Rotterdam – The Netherlands

- **Francesco Mattace Raso**, Associate Professor/Head Division of Geriatric Medicine - Department of Internal Medicine, Erasmus University Medical Center, Rotterdam, The Netherlands
- **Rob van Staveren**, Policy advisor and project leader related to the care for the elderly people, ZON Advies, Zorg Op Noord, Rotterdam, the Netherlands
- **Anthony Polychronakis**, European Programme Officer; City of Rotterdam, The Netherlands
- **Carmen Franse**, Researcher and expert Urban Health Centres, Erasmus University Medical Center, Rotterdam, The Netherlands

Annex 2: General Template



WP4 Best practices analysis

TEMPLATE

Current situation analysis in Treviso (Italy), Valencia (Spain) and Rotterdam (The Netherlands)

Introduction

Ageing problems are a common challenge for Europe and health systems: higher frail population in need of long term care, chronic conditions requiring complex response from a wide range of health professionals, often characterized by fragmented and not appropriated care. Older people access to ER more frequently; they stay longer to ER usually endig into ordinary admission, with an increasing risk of hospital-related adverse outcomes.

APPCARE (Appropriate care for elderly patients: a comprehensive model) is a project granted by the European Commission, which is amed at creating a new model for the management of frail elderly people to demonstrate how an innovative and comprehensive management of complex and co-morbid clinical situations, may maintain patient's functional status in its clinical trajectory, optimizing health care systems.

As part of this larger project, in this work package (WP4) a local situation analysis is performed for each pilot site including the best practices already tested on hospital care, prevention and coordinated care management at local, national and/or international level. Based on this, and a wider analysis at EU level (considering practices also from outside the partner's territories), APPCARE will design the new model.

Each pilot site will gather data and describe its own current situation in the management of frail patients, following this template. In each pilot sites four key informants, with varying levels of expertise, will be asked to complete the questions from this template, which consists of six different parts. Each key experts only fills out the items of his/her expertise.

Part 1. Healthcare system profile

This part of the template is focused on your country's healthcare system in general. Please describe the healthcare system in terms of *(include references whenever possible)*:

1. **Organization of the healthcare system**

[Explanation: How are primary, secondary and tertiary health care organized?; How are health care services provided (in public health services, primary health care, secondary care, emergency care, long term care etc.)?; Is there a gate keeper system?; What is the level of concentration/ (de)centralization? etc.]

2. **Accessibility of care**

[Explanation: How (financially, geographically, timely, culturally) accessible is health care?]

3. **Quality of care**

[Explanation: What is the quality of health care in terms of effectiveness, safety and patient-centeredness?]

4. **Affordability of care**

[Explanation: How affordable is health care in terms of health care expenditures and cost-effectiveness?]

5. **Coordination of care**

[Explanation: How are different levels of care connected/linked to one another?; Are integrated care and disease management initiatives available?]

**Please also include social, political and economic aspects if considered relevant*

Part 2. Pilot site profile

This part of the template is focused on the pilot site in your country. Please describe your pilot site in terms of *(include references whenever possible)*:

Geography

[Explanation: Where is it located?]

1. **(Local economy)**

[Explanation: Gross value added]

2. **Population/Demographics**

[Explanation: Size of population and their characteristics (male/female; age; nr of people >65 years age; ethnicity etc.)]

3. **Health and social care structures**

[Explanation: health organizations/authorities, number of hospitals, general practices, local authorities].

Part 3. Hospital care management of +75 patients

This part of the template is focused on hospital care that is provided to elderly (+75 years) patients in your pilot site. Please describe how hospital care for elderly patients can be characterized in terms of:

1. Patient hospital admission

[Explanation: How are older patients admitted to a hospital (through E.R. dept. or similar); What kind of hospital?; What is the hospital admission rate?]

2. Inpatient care & discharge

[Explanation: Who is taking care of elderly patients in the hospital?; What kind of care do they receive?; Individualized geriatric care?; What's the average hospital stay length?; When and how are they discharged?; Where are they discharged to (home, homecare services etc.)?]

3. Data workflow

[Explanation: How is the workflow of the data?; What happens to the patient's health data?; Who has access s to the data?].

4. Open issues

[Explanation: What are the main problems/main challenges you encounter with respect to hospital care (management) for elderly patients?]

5. Best practices* for hospital care management (local, national)

[Explanation: Are you aware of any 'best practices'* for hospital care management at local or national level? Please describe them and include references if possible]

6. Best practices* for hospital care management (international)

[Explanation: Are you aware of any 'best practices'* for hospital care management at international level? Please describe them and include references if possible]

**In which best practices are defined as health programs, interventions, and policies that have been evaluated, shown to be successful, and have the potential to be adapted and transformed by others working in the same field. In case of the APPCARE project, they have to be related to coordinated care.*

Part 4. Continuity of care after discharge/ coordinated care management

This part of the template is focused on the care that is provided in your pilot site to elderly (+75 years) patients after they have been discharged from hospital. Please describe how continuity of care/ coordinated care management for elderly patients can be characterized in terms of:

1. Continuity of care flow

[Explanation: What happens to elderly patients after being discharged from hospital? ; Do you follow them to see how they are doing?; How often? Do you contact other involved healthcare providers such as primary care providers?; What kind of care do they receive (e.g. healthcare home care services and social services)? Is multidisciplinary individualized care offered to them? ; What is the hospital readmission rate?]

2. Integration between hospital and territorial care services.

[Explanation: How is the link between hospital care and territorial care services established?; What services do territories (which one) provide? How is the coordination and cooperation between hospital and territorial care services established? Who is responsible for the care of the patients?; Is case management for patients arranged?]

3. Continuity of care networks (Institutional and informal)

[Explanations: Are there any formal, institutional and/or informal (volunteer-based) networks established to provide continuity of care for elderly people? ; How are these networks linked to each other?].

4. Data workflow

[Explanation: How is the workflow of the data?; What happens to the patient's health data?; Who has access to the data?].

5. Open issues

[Explanation: What are the main problems/main challenges you encounter with respect to continuity of care for elderly patients?]

6. Best practices* for continuity of care/coordinated care management (local, national)

[Explanation: Are you aware of any 'best practices'* for continuity of care/coordinated care management at local or national level? Please describe them and include references if possible]

7. Best practices* for continuity of care/coordinated care management (international)

[Explanation: Are you aware of any 'best practices'* for continuity of care/coordinated care management at international level? Please describe them and include references if possible]

**In which best practices are defined as health programs, interventions, and policies that have been evaluated, shown to be successful, and have the potential to be adapted and transformed by others working in the same field. In case of the APPCARE project, they have to be related to coordinated care.*

Part 5: Prevention activities

This part of the template is focused on the care that is provided in your pilot site to elderly (+75 years) people with respect to prevention of functional decline and readmission. Please describe how activities related to prevention for elderly patients can be characterized in terms of:

1. Prevention initiatives

[Explanation: Which initiatives are available with respect to secondary prevention. How is early detection of patients at risk for functional decline arranged? Are comprehensive geriatric assessments (CGA) used? Which CGAs aimed at which target areas (e.g. dementia; fractures; loneliness; polypharmacy?) are being used?]

2. Open issues

[Explanation: What are the main problems/main challenges you encounter with respect to (a lack of) prevention of functional decline and readmission for elderly patients?]

3. Best practices* for prevention (local, national)

[Explanation: Are you aware of any 'best practices'* for prevention of functional decline and readmission for elderly patients at local or national level? Please describe them and include references if possible]

4. Best practices* for prevention (international)

[Explanation: Are you aware of any 'best practices'* for prevention of functional decline and readmission for elderly patients at international level? Please describe them and include references if possible]

**In which best practices are defined as health programs, interventions, and policies that have been evaluated, shown to be successful, and have the potential to be adapted and transformed by others working in the same field. In case of the APPCARE project, they have to be related to coordinated care.*

Part 6: Data integration

This part of the template is focused on data integration in your pilot site with respect to the care that is provided to elderly (+75 years) people. Please describe how the integration of data can be characterized in terms of:

1. Information flow & level of interoperability

[Explanation: How is the patient information flow arranged?; What kind of information is included/documented? ; Who has access to the data?; Who can adjust the data (files)?; Which systems are being used?; Do all care-providers (geriatrists, primary care providers, patients) use the same system?; If not, are systems linked to one another? ;

2. Open issues

[Explanation: What are the main problems/main challenges you encounter with respect to (a lack of) data integration for elderly patients]

3. Best practices* for data integration (local, national)

[Explanation: Are you aware of any 'best practices'* for data integration at local or national level? Please describe them and include references if possible]

4. Best practices* for data integration (international)

[Explanation: Are you aware of any ‘best practices’* for data integration at international level?

Please describe them and include references if possible]

In which best practices are defined as health programs, interventions, and policies that have been evaluated, shown to be successful, and have the potential to be adapted and transformed by others working in the same field. In case of the APPCARE project, they have to be related to coordinated care.

Closing

Do you have any additional comments?