

Work Package 2 Report

# Spain



## Work Package 2: Thick descriptions of

- Badalona Serveis Assistencials (BSA)
- Àrea Integral de Salut, Barcelona Esquerra (Ais-Be)

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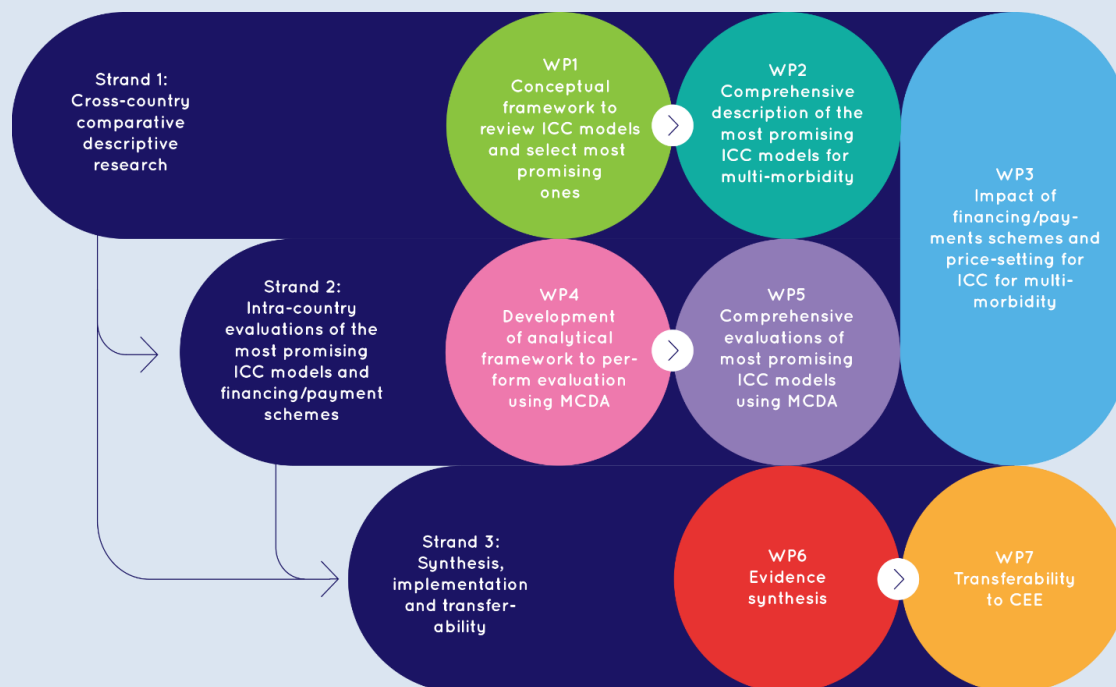
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## The SELFIE project

SELFIE (Sustainable intEgrated chronic care modeLs for multi-morbidity: delivery, Financing, and performancE) is a Horizon2020 funded EU project that aims to contribute to the improvement of person-centred care for persons with multi-morbidity by proposing evidence-based, economically sustainable, integrated care programmes that stimulate cooperation across health and social care and are supported by appropriate financing and payment schemes. More specifically, SELFIE aims to:

- Develop a taxonomy of promising integrated care programmes for persons with multi-morbidity;
- Provide evidence-based advice on matching financing/payment schemes with adequate incentives to implement integrated care;
- Provide empirical evidence of the impact of promising integrated care on a wide range of outcomes using Multi-Criteria Decision Analysis;
- Develop implementation and change strategies tailored to different care settings and contexts in Europe, especially Central and Eastern Europe.

### SELFIE strands of research and work package (WP) overview



The SELFIE consortium includes eight countries: the Netherlands (coordinator), Austria, Croatia, Germany, Hungary, Norway, Spain, and the UK.

## Executive Summary

### Badalona Serveis Assistencials (BSA)

Since the year 2000, Badalona Serveis Assistencials (BSA) has been providing healthcare and social support services with a patient-centred approach through the Care Model for Patients with Complex Chronic Conditions (MAMCC) programme. BSA serves a population of 236,000 citizens living in a suburban area of Barcelona. The MAMCC puts the person at the centre, integrating healthcare and social services and providing 24-7-365 emergency support.

The target candidates for inclusion in the MAMCC programme are frail, elderly citizens often with several chronic disorders. They usually live at home and fail to show their needs for care and support to avoid the risk of exclusion due to illness or disability of any kind. The BSA services also coach informal (family members, friends, neighbours) and formal (professionals) caregivers who provide assistance to the patient on a regular basis. MAMCC's core skills lie in the management of multi-morbidity and cognitive impairments. The main aims of the programme are to promote independent living by offering support to prevent institutionalisation and avoidable hospitalisation.

#### Service delivery

The programme is composed of various medical services – Case Management Nurse (CMN), Medical Attention at Home (AtDom), Hospital at Home (HaH), Nursing Homes Attention (NH AtDom) and Palliative Attention (PADES) – which are integrated with social care services – Telecare, cleaning services, meals at home, home care services, GPS localizer and home rehabilitation. The uniqueness of the programme lies in the integration of healthcare and social support, which has proved cost-effective and allows the provision of innovative services that promote independent living and proactive care.

#### Leadership & governance

BSA is a non-profit integrated care organization under the umbrella of the Badalona City Council. It is made up of five different entities: (i) the Hospital Municipal de Badalona, (ii) Homecare Integrated Services, (iii) the Socio Health Centre El Carme, (iv) Seven Primary Care Centres, and (v) the Centre for Sexual and Reproductive Health. Both governance and organizational change are facilitated due to the fact that BSA is an integrated organization.

#### Workforce

The strong leadership of the BSA professionals has fostered the preparation of the workforce for adoption of the care model. In the course of the programme, the new professional roles of domiciliary attention physician and case management nurse have been introduced.

#### Technologies & medical products

Information and Communication Technologies (ICT) have played a key role in supporting the novel services. The BSA programme has generated synergies between existing ICT infrastructures at regional and healthcare sector levels with innovative on-site developments supported by different programmes. Tele-monitoring services have been only carried out at pilot level.

**Information & research**

The evaluation of key performance indicators, namely: length of stay, bed occupancy days, emergency visits, hospitalization rates, process outcomes (including adherence) have been positive. Moreover, the programme has generated a clear reduction in the operational costs of clinical services, thereby demonstrating its sustainability. A formal assessment of the BSA programme is planned within the project's lifespan.

**Financing**

The BSA programme has generated significant efficiencies at healthcare sector level, providing it with sustainability despite a poor level of budget coverage through external funding. The programme is suffering from poor alignment between its successful evolution and a lack of adaptation of the reimbursement model. The current financial gap may compromise both the sustainability and further development of the programme.

**Area Integral de Salut, Barcelona-Esquerra (Ais-Be)**

The Ais-Be model was launched in 2006 to improve the coordination of care between different providers and care levels in one of the four healthcare sectors of the city of Barcelona, an area with some 524,000 inhabitants. From then on, work towards the functional integration of services in a complex system that includes heterogeneous independent providers has been ongoing. There are three distinctive elements to the Ais-Be model:

Firstly, the change is driven by Hospital Clinic, a highly specialized academic institution. The hypothesis is that an appropriate transfer of selected care complexities from hospital-based to community-based care within an integrated care scenario can increase healthcare value generation both at provider and at health system levels.

Secondly, the programme has, as one of its core goals, to foster appropriate cross-fertilization among i) healthcare; ii) innovation & research in the biomedical sciences with a systems approach; and iii) innovation in education with a focus on new professional roles.

Thirdly, significant organizational changes in the healthcare sector have been implemented as a key element for adoption. The work done has had a real impact on the territory and on the attention given to patients, who are positioned at the centre of the organizational system created by Ais-Be. This model of attention has performed well from a cost-efficiency perspective and has also shown very positive results in terms of both patient and health professional satisfaction.

**Service delivery**

SELFIE will evaluate an evolving mainstream programme addressing the management of Chronic Complex Patients (CCP) requiring specialized care among all ICT-supported integrated care services active in Ais-Be.

**Leadership & governance**

Ais-Be is currently in the process of consolidating a multi-strata governance that fosters convergence between the large-scale deployment of integrated care and the implementation of the systems medicine approach to multi-morbidity.

### **Workforce**

A culture of organizational change already successfully implemented in Ais-Be facilitates the adaptation of the workforce to well-identified evolving needs. Several new professional roles have been introduced in the course of the programme, namely an advanced practice nurse, a case management nurse, a liaison nurse and a homecare attention physician.

### **Technologies & medical products**

Two priorities are: (i) evolution of the current personal health folder (PHF) toward a self-management tool; and (ii) consolidation of a collaborative adaptive case management platform on top of the existing ICT systems.

### **Information & research**

The functional alignment of different European research and innovation initiatives undertaken in Ais-Be under the umbrella of EIT-Health, EIP-AHA and RIS3CAT, as well as specific R&D projects, should contribute to cross-fertilization among healthcare, research and innovation.

### **Financing**

The limitations of current reimbursement modalities are acknowledged. SELFIE should pave the way towards implementation of the conceptual business model that was formulated in a previous project and allows sustainability and scalability of the services.



## 1 Methodological approach

This report is part of WP2 of the project SELFIE. The WP leader is the *Institute for Advanced Studies* (IHS) in Vienna, the WP co-leader is the *August Pi i Sunyer Biomedical Research Institute* (IDIBAPS) in Barcelona. The stated objective of WP2 is to comprehensively describe the 17 integrated chronic care (ICC) programmes selected in the course of WP1, covering the following features:

- **Barriers to and facilitators of implementation:** how were the most promising ICC models implemented and what were the barriers and facilitators during the implementation phase?
- **Patient centeredness:** how is the delivery of care designed around the patient?
- **Use of modern ICT:** which ICT (information and communications technology) applications are used in the most promising ICC models to support the care process and what are the requirements for implementing them successfully in the treatment of patients with multi-morbidity?
- **Use of self-management interventions:** which self-management interventions are used in the ICC models and how are they adapted to patients from different cultural and socio-demographic groups as well as to distinguish the conditions for their successful implementation?
- **Involvement of new professional roles:** are there new professional roles (e.g. physician assistants, nurse practitioners) involved in the ICC models and what are the barriers and facilitators in their successful introduction?
- **Existing evidence:** what is the existing evidence of the impact of the most promising ICC models?

The methodological approach chosen to achieve this objective is that of a “thick description”. For each of the eight countries participating in SELFIE, this report contains at least two<sup>1</sup> thick descriptions of the programmes selected in the respective country, resulting in a total of 17 thick descriptions.

The method of thick description is a well-established qualitative empirical approach. The basic idea was first introduced by the philosopher Gilbert Ryle (Ryle, 1949). In the 1970s, it was established as a qualitative method to investigate implicit social practices in their specific contexts by the anthropologist Clifford Geertz (Geertz, 1973). Geertz himself does not provide an explicit definition of this scientific approach. Studying thick descriptions by Geertz himself as well as other scholars, however, makes it possible to deduce the main aspects of the method. In the following quote, Geertz outlines the aims of the method:

*“Setting down the meaning particular social actions have for the actors whose actions they are, and stating, as explicitly as we can manage, what the knowledge thus attained demonstrates about the society in which it is found and, beyond that, about social life as such. Our double task is to uncover the conceptual structures that inform our subjects’ acts, the ‘said’ of social discourse, and to construct a system of analysis in whose terms what is generic to those*

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<sup>1</sup> Three in the case of the Netherlands.

*structures, what belongs to them because they are what they are, will stand out against the other determinants of human behavior. [...] provide a vocabulary in which what symbolic action has to say about [...] the role of culture in human life can be expressed.” (Geertz, 1973: 22)*

In recent decades, Geertz’ methodological and conceptual work has influenced empirical research in several disciplines (McCloskey, 1988). In sociology, it is widely used in a variety of research fields, including research of care practices (Maloney-Krichmar and Preece, 2005).

As shown in Figure 1, a thick description covers several levels of depth of analysis. The starting point is a formal description, which provides information on the surface of the studied phenomenon.

Figure 1: Levels of the programme description



Source: IHS (2015)

In the specific context of the SELFIE project, this formal description pertains to the general organisational structure of the programme and formal relations of the involved stakeholders. The formal description is valuable in itself, because it gives an overview of the domains and levels of integration, the individuals and organisations involved, the tools used and the processes employed. In particular, the formal description includes the following information:

- Name of the programme
- Contact details of the programme management
- Starting date of the programme
- Geographical scope of the programme
- Target group of the programme (type of individuals/scope/included combinations of morbidities)
- Number of persons treated in the programme (total and development over time)
- Aim of the programme
- Definition/understanding of “integrated care” (as far as described in documents)

- Definition/understanding of “multi-morbidity” (as far as described in documents)
- Definition/understanding of “person centredness” (as far as described in documents)
- Definition/understanding of “self-management” (as far as described in documents)
- Organisational form and ownership of the programme (including legal form)
- Involved partner organisations (payer(s), medical and social service providers), including subdivisions (e.g. departments of a hospital)
- Involved disciplines and professions

The formal description is mainly based on available literature, a variety of documents (e.g. official documents of the programme, grey literature) and expert information. A document analysis was performed on these materials, which comprise the first source of information and the basis for obtaining “hard facts” on the respective programme.

However, written documents are in general not suitable to give a deeper understanding of what actually constitutes the programme below its surface when put into practice. These substructures are, however, essential for the functioning of the programme. In addition to the formal description, the method of thick description therefore aims to gain insights on what lies beneath the surface of the studied phenomenon (see Figure 1).

For the purpose of gathering the necessary information, interviews were conducted with different stakeholders involved in the programme. These served as the second source of information. While the interviews were also used to complement the “hard facts” gathered in the course of the document analysis, their main aim was to obtain “soft facts” about the substructure of the programmes. Therefore, questions of “how” and “why” were at the centre of the interviews and the subsequent analysis of their contents. This comprehensive approach allows for a deeper understanding of what daily practice in the programme looks like and in which way multi-morbidity is addressed in the specific context of the programme.

A set of stakeholder types to be interviewed was defined in advance. This set consisted of the following stakeholder types:

- A. **Manager(s) of the programme**
- B. **Initiator(s) of the programme:** individuals or representatives of institutions that participated in initiating, conceptualising and planning the programme (e.g. representatives of sickness funds, physicians, etc...)
- C. **Representative(s) of sponsor/payer organisations:** individuals or representatives of institutions that fund the programme on a project basis or on a regular basis (e.g. representatives of sickness funds, representatives of municipalities, representatives of associations, etc...)
- D. **Medical and social staff**
  - D1: physician(s)
  - D2: non-physician medical staff (e.g. nurses), social staff, new professional groups (if applicable)
- E. **Informal caregivers** (e.g. relatives, neighbours, volunteers)

- F. **Clients or their representatives** (e.g. clients or persons in their close environment, representatives of self-help groups)
- G. **Other stakeholder(s)**: individuals or representatives of institutions, who turn out to be of specific relevance for the respective programme and do not fit in the categories A.-F.

For each stakeholder type, the WP leader set a minimum number of persons to be interviewed. However, considering that the 17 selected programmes involve very different kinds of stakeholders, a specific sample of interviewees was developed for each individual programme. The partners discussed these samples with the WP leader, in order to ensure a balanced sample structure in each programme.

For each of these stakeholder types, thematic focus areas were defined. Based on these focus areas, a set of interview protocols was prepared by the WP leader. The protocols accounted for the different backgrounds and relevant themes of the individual stakeholder types. This served the purpose of gaining insights into the programme from various perspectives. The included questions concerned, for example, the stakeholders' perceptions of delivery of care for persons with multiple chronic conditions, their roles and relationships in the programme, their specific problems and their personal views.

In general, all interview protocols were structured according to the following outline:

- A Brief introduction about SELFIE and the interviewer as well as clear information about the goal of the interview
- Signing and exchanging the anonymity agreement and the declaration of consent for recording
- First question: Regarding the person's qualification and position in the programme
- Next question: Regarding the main work of the interviewee and his/her specific role in the programme
- 1-2 main questions: Regarding the work in the programme (covering selected focus area of respective stakeholder type)
- (Direct and indirect follow-up questions)
- Last question: valuation of an important aspect of the programme

The interview protocols were adapted by the partners according to the specific context of each programme and interviewee, using prior knowledge obtained from the document analysis and from previous interviews. The interviews were carried out face-to-face and the interview duration was between 30 and 90 minutes. The interviews were recorded and transcribed. The resulting transcripts were analysed using the method of content analysis developed by Mayring (Mayring, 2001). This method involves the following steps of abductive interpretation<sup>2</sup>:

- Selecting units of analysis
- Paraphrasing these units of analysis

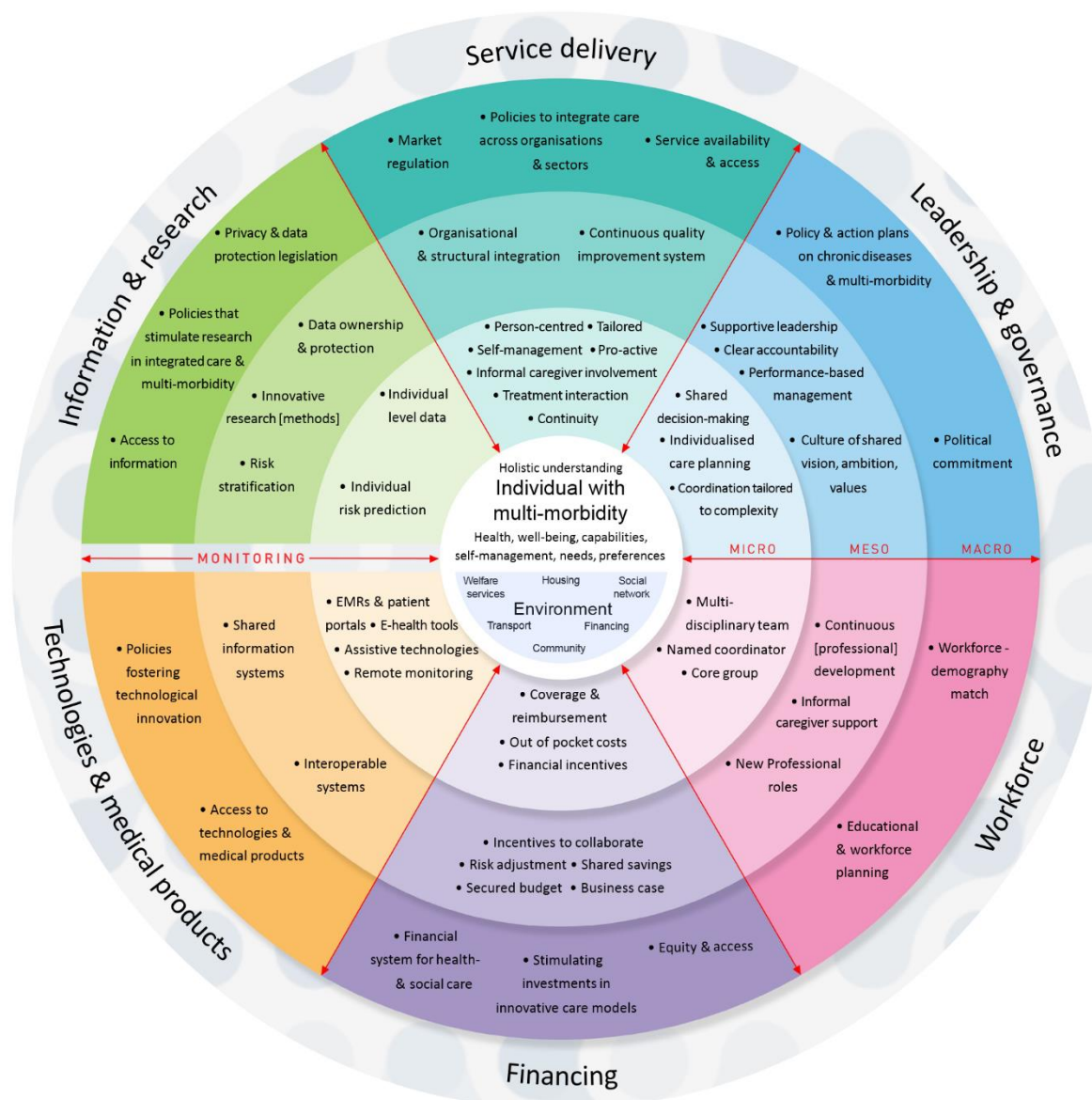
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<sup>2</sup> Timmermans and Tavory (2012) define abduction as a "creative inferential process aimed at producing new hypotheses and theories based on surprising research evidence."

- Transforming the paraphrases to short forms
- Constructing categories, where possible

The thick descriptions are structured according to the elements of the conceptual framework developed in the course of WP1. The model is depicted in Figure2.

Figure 2: Conceptual framework for the delivery of care for persons with multiple chronic conditions



Source: Leijten F. et al. (submitted manuscript, 2016)

Simultaneously, each thick description covers the eight tasks of WP2 set out in the SELFIE proposal, as well as one supplementary task (denoted by TS), which was agreed on by the project consortium at the kick-off meeting and actually belonging to WP3:

- **Task 1:** To develop the approach for the qualitative analysis of ICC programmes

- **Task 2:** To investigate how the most promising ICC programmes were implemented as well as to identify barriers and facilitators during the implementation phase
- **Task 3:** To analyse how the delivery of care is designed around the patient in the most promising ICC programmes
- **Task 4:** To analyse the relationship with long term care, social care and other partners beyond the healthcare system
- **Task 5:** To investigate which ICT applications are used in the most promising ICC programmes to support the care process as well as to explore the requirements for implementing them successfully in the treatment of patients with multi-morbidity
- **Task 6:** To analyse which self-management interventions are used in the most promising ICC programmes and how they were adapted to patients with multi-morbidity from different cultural and socio-demographic groups as well as to distinguish the conditions for their successful implementation
- **Task 7:** To explore new professional roles (e.g. physician assistants, nurse practitioners) involved in the ICC programmes as well as to identify barriers and facilitators in their successful introduction
- **Task 8:** To review existing evidence on the impact of the most promising ICC programmes
- **Task TS:** To explore the experiences of the stakeholders regarding financing and payment schemes

The WP leader provided the partners with continuous guidance in order to ensure that all partners are able to follow the methodological approach described above. This guidance mainly consisted in three parts. First, in the preparatory phase of WP2, methodological guidance materials were developed by the WP leader for all partners. These materials were presented to the partners in the course of the 2<sup>nd</sup> steering committee meeting in Vienna on January 25<sup>th</sup> and 26<sup>th</sup> 2016. Second, a special training course was held at IHS Vienna for researchers directly involved in the thick description on April 14<sup>th</sup> 2016. Third, all 17 thick descriptions were reviewed in order to ensure that they are harmonised to a certain degree. In this third part, the WP leader received support from the WP co-leader. The review process was divided as follows:

- **WP leader:** Germany, Netherlands, Norway and Spain
- **WP co-leader:** Austria, Croatia, Hungary and United Kingdom

However, it is part of the method that thick descriptions are not standardized but instead should be guided by what the prominent features of the individual studied phenomenon are. Therefore, the diversity in the thick descriptions reflects different topicalities, approaches, challenges and solutions.

As mentioned above, the method of thick description allows for a deep understanding of the implicit structures of the investigated programmes. This is of utmost importance also as a basis for further work packages of the SELFIE project. In the context of WP3, this deep knowledge can help to understand incentives of payment methods better and thus help to develop a comprehensive guide to financial and payment schemes that facilitate the provision of ICC to multi-morbid patients, as well as a guide to



pricing of ICC programmes. In the context of WP4, this knowledge it can help to identify the relevant indicators to measure outcomes of ICC programmes. In the context of WP5, it can help to gain ideas regarding how to set up a suitable empirical evaluation of these programmes. Furthermore, it may help to better understand and explain the outcomes of the empirical evaluation.

Each report is structured in the following way: After the methods chapter, chapter 2 provides general information on the national health and social care system with a special focus on integrated chronic care for persons with multi-morbidity. This chapter covers the macro level of the conceptual framework and has the purpose of giving insight into the specific context the two selected programmes are embedded in. The programmes are subsequently described in detail in chapters 3 and 4, respectively. The descriptions present important findings obtained from the document analyses as well as the interview analyses. After a short overview of basic information about the programme, the findings are structured according to the six segments of the conceptual framework: service delivery, leadership and governance, workforce, technologies and medical products, information and research/monitoring and financing. Furthermore, the implementation process is described in an additional section. The descriptions conclude with a discussion of the respective programme. The discussion summarises the distinctive features of the programme and puts the empirical findings in context of the conceptual framework.

The report includes several quotations from the interviews. These are intended to present the stakeholders' perspectives in their own words. They were selected in the process of "abduction" and are used as a source of, e.g., typical forms of care practices, cooperation forms and motivations for participating in the programme. All quotations are anonymised and translated into English. In the appendix, however, they can be found in the respective original language.

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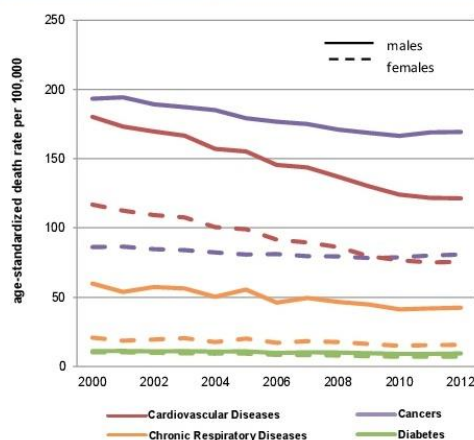
## 2 Macro level

### Spain

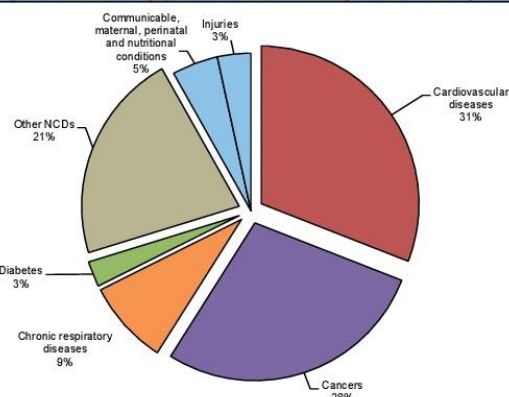
Total population: 46 755 000  
Income Group: High

Percentage of population living in urban areas: 77.4%  
Population proportion between ages 30 and 70 years: 55.7%

#### Age-standardized death rates



#### Proportional mortality (% of total deaths, all ages, both sexes)



Total deaths: 398,000  
NCDs are estimated to account for 92% of total deaths.

#### Adult risk factors

	males	females	total
Current tobacco smoking (2011)	33%	27%	30%
Total alcohol per capita consumption, in litres of pure alcohol (2010)	15.9	6.7	11.2
Raised blood pressure (2008)	30.2%	24.0%	27.0%
Obesity (2008)	26.5%	28.7%	26.6%

#### National systems response to NCDs

Has an operational NCD unit/branch or department within the Ministry of Health, or equivalent	No
Has an operational multisectoral national policy, strategy or action plan that integrates several NCDs and shared risk factors	Yes
Has an operational policy, strategy or action plan to reduce the harmful use of alcohol	Yes
Has an operational policy, strategy or action plan to reduce physical inactivity and/or promote physical activity	Yes
Has an operational policy, strategy or action plan to reduce the burden of tobacco use	Yes
Has an operational policy, strategy or action plan to reduce unhealthy diet and/or promote healthy diets	Yes
Has evidence-based national guidelines/protocols/standards for the management of major NCDs through a primary care approach	Yes
Has an NCD surveillance and monitoring system in place to enable reporting against the nine global NCD targets	DK
Has a national, population-based cancer registry	No

DK = Country responded "don't know"

Source: World Health Organization - Noncommunicable Diseases (NCD) Country Profiles, 2014  
[http://apps.who.int/iris/bitstream/10665/128038/1/9789241507509\\_eng.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/128038/1/9789241507509_eng.pdf?ua=1)

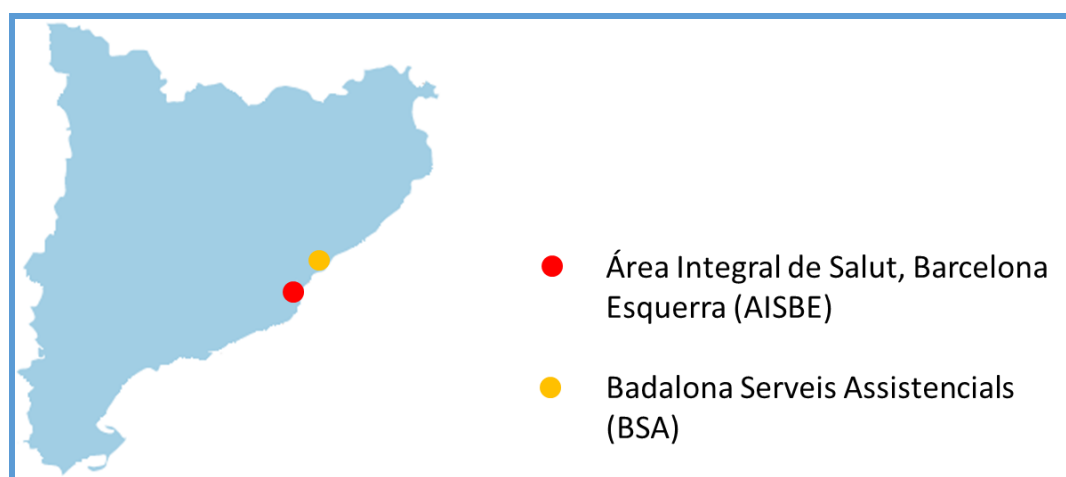
Table 1: Key facts and figures of the two selected programmes in Catalonia

	<b>Catalunya</b>
Population	7.571.007
Population ≥ 64 yrs. (%)	18%
Model of care	Beveridge
Life expectancy (yrs.)	80,3 M & 86 W
Birth rate	11.7/1000 inhabitants
Gross mortality rate	8.28/1000 inhabitants
Infant mortality	2.7/1000 live births (OECD source)
Potential Years of Life Lost (PYLL)	2.557 per 100.000 inh. 0-69 y. (OECD source)
Healthcare expenditure % GDP	8,9% (public + private expenditure) (OECD source)
Healthcare expenditure per capita €/year: Social expenditure per capita €/ year:	1250 € (health) per person / 300€ (social) per person
Coverage (% population) (paid by taxes)	~100%
Public Payer	Health: One Public Payer (Catsalut) / Social: Department of Welfare
Suppl. private insurance (% population)	27% population (double insured)
Number of physicians per 10,000 population	7 x 10,000 inh. (OECD source)
Number of hospital beds per 10,000 population	38 x 10,000 inh. (OECD source)
Hospitalization rate per year	10.869 per 100.000 inh.(OECD source)

Source: World Health Organization - Noncommunicable Diseases (NCD) Country Profiles, 2014

[http://apps.who.int/iris/bitstream/10665/128038/1/9789241507509\\_eng.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/128038/1/9789241507509_eng.pdf?ua=1)

Figure 3: Geographical scope of the two selected programmes in Catalonia



Source: Author elaboration

## 2.1 Service delivery

### *Description of the main policies and regulations shaping the health and social care system*

Since 2007, promotion of integrated care for chronic patients is one of the main strategic areas. Consolidated strategies are formulated in the Catalan Health Plans (2011-2015 and 2016-2020).

In Catalonia, there is limited integration between healthcare and social care. The two Departments Health and Welfare are organized separately. But, a new Integrated Health and Social Care Plan (PIAISS, 2014) is aiming at achieving functional integration between health and social care services.

At Spanish level, several initiatives have been introduced to foster coordination between healthcare and social care. Like the “Spanish Dependency law” introducing universal coverage for moderate to severely dependent persons. A co-financing scheme has been established between the Spanish government and the different regional governments in order to cover the budgetary needs generated by the new legal frame. However, the economic crisis has reduced financial capacity and it has introduced severe cuts in both healthcare and social care budgets.

### *Description of clear and well-designed national/regional policies/plans and programmes supporting integrated care for chronic patients with multi-morbid condition/complex care needs*

The Catalan Health Plan containing general & specific goals for health promotion and healthcare delivery, as well as specific strategies and key performance indicators (KPI), is updated every five years and approved by the Catalan Parliament.

### *Description of specific policies for integration of social and healthcare programmes for management of patients with multi-morbidity with current or potential social needs?*

As mentioned below, the Integrated Health and Social Care Plan in Catalonia, under Ministry of Presidency of the Catalan Government, fosters integrative strategies and actions between the Departments of Health and Social Affairs.

[http://www.gencat.cat/salut/botss/html/ca/dir3609/acord\\_piaiss\\_2014.pdf](http://www.gencat.cat/salut/botss/html/ca/dir3609/acord_piaiss_2014.pdf)

Release of the new Plan 2016-2020 has been recently done on 19 July 2016 where Chronic Care and Integrated Health and Social care should be extended and consolidated:  
[http://salutweb.gencat.cat/web/.content/home/el\\_departament/Pla\\_salut/pla\\_salut\\_2016\\_2020/Documents/Pla\\_salut\\_Catalunya\\_2016\\_2020.pdf](http://salutweb.gencat.cat/web/.content/home/el_departament/Pla_salut/pla_salut_2016_2020/Documents/Pla_salut_Catalunya_2016_2020.pdf)

The new Health Plan 2016-2020 includes in Strategic Line number 12 different actions fostering an Integrated Health and Social Care Plan that will be developed jointly with the Strategic Plan of Department of Welfare. Additionally, the Chronic Care programme maintains an Integrated Care strategy within this new Health Plan 2016-2020

## 2.2 Leadership & Governance

*Briefly describe how governance of the health and social care system is structured at national/regional level and who the main actors are*

As mentioned, Catalonia has two separate Departments for Health and for Welfare and Families. The new Integrated Health and Social care Plan accountable to the Department of Presidency is developing inter-departmental initiatives to promote integrated care actions aligning healthcare and social support among Department of Health, Department of Welfare and councils which has clear responsibility for planning, commissioning and organizing social care services. Specific authorities across the Catalan territory (areas and sectors) are devoted to the implementation of these integrative policies.

*Briefly describe how governance of the integrated care initiatives/programmes at national/regional level is structured and who the main actors are*

The Department of Health of the Catalan government is responsible for the design, execution and monitoring of the Catalan Health Plan. It has the support of two agencies: AQuAS (addressing quality of health and monitoring of KPI) and TICSALUT (standards and innovation on ICT for health). Policies and actions fostering integration between healthcare and social support are driven by a specific action group under the umbrella of the Presidency of the Catalan government. Top & Down and Bottom & Up complicities are built-up through the different Master Plans covering highly prevalent diseases (i.e. Cardiovascular, Mental, Cancer, Respiratory, etc..) or prioritized areas (i.e., Palliative Care), as described in detail in the Catalan Health Plan.

Commissioning Health Authority (CatSalut) is introducing agreements targeting specific objectives to be shared among Primary Care, Hospital care, Long-term care facilities and Mental health at county level.

## 2.3 Workforce

*How is the workforce prepared for and involved in the transitions and scale-up of integrated care?*

Preparation of the workforce for the chronic care challenge following the guidelines reported by WHO in 2005 (\*) is mainly done through specific post-graduate courses. But it is clearly suboptimal. Participation of professionals is mainly channeled through the Master Plans indicated above, specific innovative programmes/projects and an annual meeting organized by the Catalan Department of Health involving more than one thousand professional leaders.

(\*) *Preparing a healthcare workforce for the 21<sup>st</sup> Century: the challenge of chronic conditions* ([http://www.who.int/chp/knowledge/publications/workforce\\_report.pdf](http://www.who.int/chp/knowledge/publications/workforce_report.pdf))

*Describe the occurrence of new professional roles and occupations involved in integrated care.*

The roles of nurse case managers with specific roles in chronic care management have been consolidated in primary care enhance quality of care for people with multi-morbidity or complex needs. In most cases there no new and additional posts; that is, some primary care teams are dedicating some community nurses to manage care of complex patients at home. We have approximately 1 case manager per each 40-60,000 inhabitants. In hospitals, some nurses have been dedicated to “liaison nursing” function to facilitate and improve transitional care and communication with primary care. We acknowledge that additional actions are needed in this area to enhance coordination between primary and specialized care.

## 2.4 Financing

*Brief description of the funding system for the health and social care sector in general and integrated care specifically*

There are separate funding schemes for Primary care, Hospital care, long-term care facilities, mental health and social care. In the case of Primary care new financing payment has been introduced a per capita payment adjusted by local homemade stratification called GMA (Adjusted Multi-morbidity Groups). An increased part of budget is related to a common Pay per Performance scheme with some common targets among providers from different sectors working together for the same population in each territory. This variable amount of payment could reach 5- 15% of the total budget in Primary Care and 0,5% in case of hospital care trying to increase this variable progressively up to 5% in the forthcoming years but progress is difficult in a recent budget-cut environment.

*Are financial policies aligned with large scale implementation of integrated care?*

The existence of only one public payer (Catalut) in healthcare facilitates both design and testing of incentives for deployment of integrated care through novel modalities of both service reimbursement and public procurement favoring innovation of healthcare services. Payment-per-Performance, reimbursement of specific programmes and testing of modalities of bundle payments are firm but insufficient steps toward this direction. Pay-per-performance is introducing some common targets like decreasing avoidable hospital admissions related to Ambulatory care Sensitive Conditions (ACSC) to all providers (PHC, Hospital, Long term care facilities, mental health) like decreasing avoidable hospital admission and readmissions related to chronic illnesses or for example identifying a minimum prevalence of patients with complex needs which has an intervention plan.

*How is sustainability of funding for integrated care ensured?*

We believe that modalities like Pay-per-Performance related to the Shared Outcome Framework should increase its internal weight, as well as some Total per capita scheme should be planned around a geographical area related to a county level. As Primary care has a “statutory” condition it is difficult to

explore a total per capita model (with some adjustment) within a territorial multi-provision network. Statutory condition of most primary care centers is trying and required to be more flexible to facilitate involvement in a more comprehensive territorial per capita payment sharing or pooling some part of the budget between primary care and hospital care.

So far, there has not been experience in pooling some part of the budgets between health and social care but it should be considered as it exists in other countries and regions such as Scotland.

## 2.5 Technologies & medical products

*Describe national/regional policies to promote the use of ICT to support integrated care?*

Interoperability tools for health information exchange at regional level, electronic prescription and personal health folder are deployed in the entire territory. Shared National Health record is well implemented and all providers are urged to publish Minimum dataset to be shared among all professionals working for the same patient.

Current efforts are being devoted to further refine current functionalities in two main directions: i) transformation of the current personal health folder into a self-management tool with an increasing number of services for patients and citizens, as well as a tool fostering integration of healthcare and social support sharing health and social care information of common interest, achieving large-scale deployment; and, ii) develop functionalities supporting adaptive case management on top of the existing interoperability tools.

*Describe national/regional policies stimulating e-health applications and assistive devices?*

Several experiences have been successfully implemented to facilitate collaborative work between primary and specialized care (tele-dermatology, remote consultation in pediatrics, telecare for sore ulcers at home), as well as between secondary care and tertiary care (teleictus,...). Also, there are some local telehealth initiatives addressed to patients with heart failure and COPD.

## 2.6 Information & research

*Describe legislative framework on data privacy with respect to integrated care? Does it follow the current EU directive? Is it constraining implementation of integrated care?*

The current Spanish data protection law (LOPD) is fully implemented. It follows the current EU directive. But adaptive changes to the new 2018 EU directive are being prepared. The current LOPD is one of the most restrictive legal frames at EU level, but it is not constraining deployment of integrated care.

*Describe specific national/regional research programmes for integrated care and/or multi-morbidity*

NEXTCARE (RIS program) - Personalized care of chronic patients in a digital health framework. It is a project for innovation in health services with three main objectives: (i) Regional deployment of integrated care services for chronic patients with a personalized medicine approach; (ii) Development of a test-bed, willing for international leadership, for the use of Information and Communication Technologies (ICT) in novel services that generate value in the healthcare system of Catalonia; and, (iii) Development and monetization of novel products and services with a high level of transferability to other healthcare systems, contributing to strength Catalan industrial competences.

*Describe if and how they are embedded in larger (European-wide) innovation & research platforms for integrated care?*

The region is active in the three main EU platforms promoting deployment of integrated care: i) European Innovation Partnership on Active and Healthy Ageing – EIP-AHA (four stars reference site just awarded and recognized); ii) European Institute for Technology – Health (EIT-Health); and, iii) Research & Innovation Strategies (RIS)

## 2.7 References

Report published by AQUAS (Technology and Quality Agency in July 2016:

[http://observatorisalut.gencat.cat/web/.content/minisite/observatorisalut/osscc\\_central\\_resultats/informes/fitxers\\_estatics/MONOGRAFIC\\_22\\_OCDE\\_2016\\_act.pdf](http://observatorisalut.gencat.cat/web/.content/minisite/observatorisalut/osscc_central_resultats/informes/fitxers_estatics/MONOGRAFIC_22_OCDE_2016_act.pdf)

### 3 Programme 1: Badalona Healthcare Services (Badalona Serveis Assistencials)

#### 3.1 Basic information

##### 3.1.1 Basic information about the programme

Table 2: Basic information about the programme

Information category	Description
Programme name	Care Model for Patients with Complex Chronic Conditions
Contact details, programme management	Dr. Pilar Otermin Medical Director of Badalona Serveis Assistencials. Responsible of the management of the programme in the three levels of assistance: primary care, specialised care and social care.  Ca l'Amigó. Pl. de Pau Casals, 1. 08911 Badalona. Tel. 93 464 83 00. E-mail: <a href="mailto:potermin@bsa.cat">potermin@bsa.cat</a>
Starting date of the programme	2000 design and launching of the programme, functioning since 2004.
Geographical scope	Badalona region (cities of Badalona, Montgat and Tiana).
Target group of the programme	Vulnerable population in the area of the Badalona Region (frail, elderly and patients with complex illnesses, with emphasis on comorbidities and cognitive impairments).
Number of patients treated in the programme	Badalona region has 235,566 inhabitants.
Aim of the programme	To identify, prevent and treat complex chronic patients, reducing acute episodes and helping to: <ul style="list-style-type: none"> <li>i) Avoid further hospitalizations.</li> <li>ii) Evaluate each particular need to design and implement individual integrated care plans.</li> <li>iii) Include general geriatric evaluation.</li> <li>iv) Promote independent living for patients, while maintaining good quality of life.</li> <li>v) Coordinate the work of the interdisciplinary teams doing the interventions.</li> </ul>
Definition/understanding of “integrated care”	Badalona Serveis Assistencials is defined as an Integrated Care Organization with regard to six different levels of integration: <ul style="list-style-type: none"> <li>i) Functional integration: back office and support function coordination across all units involved.</li> </ul>



	<ul style="list-style-type: none"> <li>ii) Organisational integration: existence of a single organisation in charge of health and social care provision.</li> <li>iii) Professional integration: development of multidisciplinary teams of health and social care professionals across different tiers of care.</li> <li>iv) Service/clinical integration: development of the care pathway as a single/seamless process across time, place and discipline.</li> <li>v) Normative integration: shared mission work values and organisational/professional culture.</li> <li>vi) Systemic integration: alignment of incentives at organisational level.</li> </ul> <p><i>(Source: Strategic Intelligence Monitor on Personal Health Systems Phase 3. BSA Case Study Report)</i></p>
Definition/understanding of “multi-morbidity”	<p>Badalona Serveis Assistencials has designed a predictive modelling tool that allows the stratification of the population according to risk and care needs using multi-morbidity and frailty criteria.</p> <p>Frailty is defined by one of the following criteria:</p> <ul style="list-style-type: none"> <li>i) Age &gt; 85</li> <li>ii) The patient is in the Domiciliary Care Programme (patients that are not able to move to Primary Care)</li> <li>iii) Barber test for detecting geriatric impairment</li> <li>iv) Polipharmacy (&gt;10 drugs)</li> <li>v) Social risk</li> <li>vi) 2 Hospitalizations at the Hospital or the Social Health Centre or 2 emergencies during the last year. Trauma and surgery processes are excluded.</li> <li>vii) Disabling diseases</li> </ul> <p>To identify multi-morbidity, Badalona Serveis Assistencials has developed a model based on economic and health variables, which takes into account comorbidities, autonomy and healthcare complexity. Depending on the multi-morbidities, BSA classifies the patients into different groups so as to adapt the resources needed:</p> <ul style="list-style-type: none"> <li>i) Patients without any disease; Promotion and prevention</li> <li>ii) 1-2 chronic conditions; Patient at risk; Self-empowerment</li> <li>iii) 3-4 chronic conditions; Medium complexity patient; Assisted care; Disease management</li> <li>iv) &gt; 5 chronic conditions; High complexity patient; Special care; Case management</li> </ul> <p><i>(Source: Strategic Intelligence Monitor on Personal Health Systems</i></p>

	<i>Phase 3. Badalona Serveis Assistencials Case Study Report)</i>
Definition/understanding of “patient centeredness”	<p>Organizational transformation has been carried out to ensure that patients and their needs are at the centre of health and social care provision.</p> <p>Although no specific definition of person centeredness is provided, documents emphasize the importance of coordination between care providers and professionals involved in the provision of health and care in order to be able to provide an integrated approach to health and care needs. Integration of services are at the centre of the description of the Mission of the organization (Being an integral organization, leader in the provision of health and social services...) as well as in the values guiding the organization, which include professionalism, team work and respect. Fostering of relationships between professionals, building multidisciplinary care teams and providing individualized care for people with complex needs by offering coordination among the different professionals involved are also identified at the centre of the model.</p> <p>(Source: <i>Strategic Intelligence Monitor on Personal Health Systems Phase 3. Badalona Serveis Assistencials Case Study Report, Mission, Vision and Values of BSA, BSA Cookbook</i>)</p>
Definition/understanding of “self-management”	No definition of self-management was found.
Organisational form and ownership	Private organization, under the legal form of a public limited company funded entirely by public capital
Involved partner organisations	All the centers managed by Badalona Serveis Assistencials collaborate within the programme, (the Hospital Municipal de Badalona, the Homecare Integrated service, the Socio Health Centre El Carme and 7 Primary Care Centres). Badalona Social Council is also involved in the programme through the provision of Social Services in the city.
Involved disciplines and professions	Professionals of different disciplines and professions (primary care doctors, specialized doctors, nurses, social workers and family workers) working together in order to deal with the needs of complex chronic patients.

Source: Author elaboration based in information provided by Badalona Serveis Assistencials

### 3.1.2 Overview of the information used for analysis

The following **documents** have been analysed:

i) Reports:

- Francisco Lupiañez-Villanueva, Alexandra Theben (2015) Strategic Intelligence Monitor on Personal Health Systems Phase 3 (SIMPHS3). BSA (Spain) Case Study Report.
- Open Evidence (2014) Study of Integrated Care in European Regions: Case Study of Badalona Serveis Assistencials (Spain).

ii) Internal documents and Protocols:

- Mission, Vision and Values of BSA.
- Ajuntament de Badalona. (2008) Programa Marc Serveis d'Atenció Domiciliària.
- BSA Cookbook ACT (2015).
- Sebastià Santaeugènia, Albert Monterde, Joan Cunill (2014). Model d'Atenció residencial – Equip EAR Badalona Serveis Assistencials.
- Badalona Servicios Asistenciales. Memorias de actividad – 2005 – 2015.

iii) Posters and Communication in congresses:

- Maria Jesús Real, Joan Cunill, J. Alcalà, E. Calpe, M. Amador, MA Mas (2014), Fem Salut i construïm futur.
- M<sup>a</sup> José Sabariego Manjón (2013). Coordinadora d'Infermeria ABS Montgat-Tiana. Model d'atenció domiciliària a l'atenció primària de BSA.
- Miquel Àngel Mas, Carles Pujol, Conxita Closa, Sebastià Santaeugènia (2013). Hospitalització domiciliària integral (HDI) Experiència Col·laborativa entre un servei de geriatría i un de rehabilitació.
- M<sup>a</sup> Jesús Real, Lola Abril, José María Gómez, Berenice Ruiz, Maria Miguelez, Isabel Salvador. Los nuevos tiempos. “Gestión de Casos”.
- Dr. Miguel Ángel Mas. Model d'Atenció al Malalt Crònic Complex en una organització sanitària integral (El MAMCC de BSA). Marc conceptual i primers resultats.

**Field work** has been conducted between May and June 2016 and 15 persons have been interviewed (see Annex I).

## 3.2 Service delivery

### 3.2.1 Design of delivery of care

#### *General description*

Badalona Serveis Assistencials (BSA) is an Integrated private care organization that manages the Hospital Municipal de Badalona, the Homecare Integrated Service, the Socio Health Centre El Carme, 7 Primary Care Centres and the Centre for Sexual and Reproductive Health, providing care to a total population of 235,566 inhabitants in a very populated suburban area of Barcelona (Spain). BSA has been responsible for health and social care services in this area since 2000, when the Badalona's City council included social care under the BSA service provision, fostering a new model that would put citizens' and patients' needs at the centre of the system.

Within this context, BSA launched the Care Model for the Patients with Complex Chronic Conditions (MAMCC) defining the care model that must be followed by all the professionals from BSA in order to deal with the needs of those patients.

The main target groups of MAMCC integrated services are vulnerable subgroups, especially the frail, the elderly and patients with complex illnesses, with emphasis on comorbidities and cognitive impairments. They are mainly patients who suffer any chronic disease, live at home, autonomous or in a dependency situation, who have home care needs or are at risk of exclusion due to illness or disability of any kind. The BSA integrated services also support caregivers (family members, friends, neighbours or professional caregivers providing support to the patient on a regular basis).

The MAMCC involves integrated attention addressed to complex chronic patients (CCP), a group of patients mainly characterized by a high mortality rate and a high consumption of healthcare resources. The model puts the person at the centre combining medical attention with social resources and 24-7-365 emergency support.

One of the objectives of the Model is to promote the independent life of CCP, offering support to avoid institutionalisation and hospitalisation. Depending on the capacities and needs of the patients, medical attention can be provided at the primary care centres, at the Hospital or at the patient's home. In all those cases a specialized nurse cares for patient needs and guarantees the continuity of care.

BSA also has a special characteristic that distinguishes it from any other healthcare provider in Catalonia, which is that it provides both health assistance and caters for social care services. Originally, in Catalonia there is a separation between the Department of Social Welfare and Family and the Department of Health. In terms of welfare, this separation has not proven to be the most suitable to provide effective and quality care to the patient who receives benefits from both types simultaneously. Because of that, BSA with the support of Badalona's city council decided in the year 2000 to change the conceptual model, focusing it on the patient. This model was implemented at the operating level by transferring social services to BSA, a company originally dedicated to the provision of health services, and thus a fusion between the conceptual and operational level was obtained. From 2004 social services are managed by BSA and a specialized team is in charge of the management of all the social resources addressed to patients that live at home and their caregivers (cleaning services, personal services, home catering, tele-monitoring services, etc.). These services can be prescribed not only from social care systems but also from health services, avoiding duplicities and providing a continuum of services.

The focus of BSA is on chronic disease management, health and social services integration and homecare management. Services provided include:

i) Health services:

- Home care attention provided by primary care doctors and nurses
- Specialized care health services at Badalona Hospital
- Home hospitalization team
- Home palliative care services

ii) Care services:

- Home care services (family workers)
- Meals at home
- Laundry service

- Clean at home
- Tele-care

### Purpose

Documentation available describes the MAMCC as aimed to identify, prevent and treat chronic illness putting the needs of patients at the centre of the system. According to the description of the programme (*BSA cookbook 2015*) the main objective is to offer an integral care model through the provision of social and healthcare services, based in the optimization and integration of resources.

During the interviews three aspects were identified as the main aims of the programme: i) avoiding hospitalization and institutionalization, ii) offering a continuum of services, and iii) educating patients towards a proactive care.

#### i) Avoiding hospitalization and institutionalization and giving the patient resources to be treated at home:

The MAMCC prioritizes, when possible, taking care of patients at their home. The underlying idea is that chronic patients are better cared at home and that hospitalization entails risks for these type of patients that should be avoided as much as possible (infections, sores, confusion, etc.). As one of the managers of BSA expresses it:

*Our objective is that the person stays at home and avoid, when possible, admittance at the hospital, the socio-health centre or the final institutionalization of the patient. [IP04\_1]*

Moreover, taking domiciliary care allows a more efficient management since the cost of hospitalization or institutionalisation are higher than those of maintaining an specialized team capable to offer a high quality service to take care of all the needs of patients at home.

#### ii) Ensuring a continuum of care through the integration of social and health services:

Offering an integral care is a central objective of the programme, especially when the patient receives domiciliary attention. The experience of BSA is that a chronic patient being treated at home has different type of needs. Some of them have to do with health issues while others are related to social needs. The care model implemented by BSA is different from others in Catalonia in that it provides an integral approach to all these needs. All the information from the patient is centralized and resources can be adjusted to the particular needs of each patient, in each particular moment, offering a continuum of services from primary to specialized attention and integrating health and social care. According to one of the managers of BSA, the idea underlying the model is that it's the system that has to adapt to the person, rather than the person adapting to the system:

*Pretending that persons should adapt to the system is very difficult. It's us who have to adapt, and if we have to change professional profiles or schedules, we do it. [IP03\_1]*

### iii) Educating the patient, giving support and acting before the crisis emerge:

When dealing with chronic complex patients prevention is a key issue. In all the programmes addressed to these types of patients' prevention and education play a central role and they can be useful to avoid visits to emergency and hospitalization. When crisis emerge it is too late to act. Therefore, it is crucial working with the patient and the caregiver before this happens.

In order to promote the active participation of the patient and/or the family, the different healthcare professionals (doctor, nurse, social worker, etc.) have to be proactive. This is accomplished by detecting exacerbations, providing a person of reference for each case, giving the patient a phone number to which he or she can phone at any moment, following up the patient's health and acting quickly when a problem occurs. According to one of the managers of BSA, the underlying idea is that professionals have offer as much support as possible to the patients and their families in order to guarantee they can cope with the different situations involved during the care process:

*I'm a great defender of domiciliary attention, if not, I wouldn't have been involved in all this, but I acknowledge that these patients are complex patients, and what you are doing is transferring the responsibility and decision making to the family. Therefore, you have to guarantee them the as much professional support as possible. [IP04\_1]*

### *Services provided*

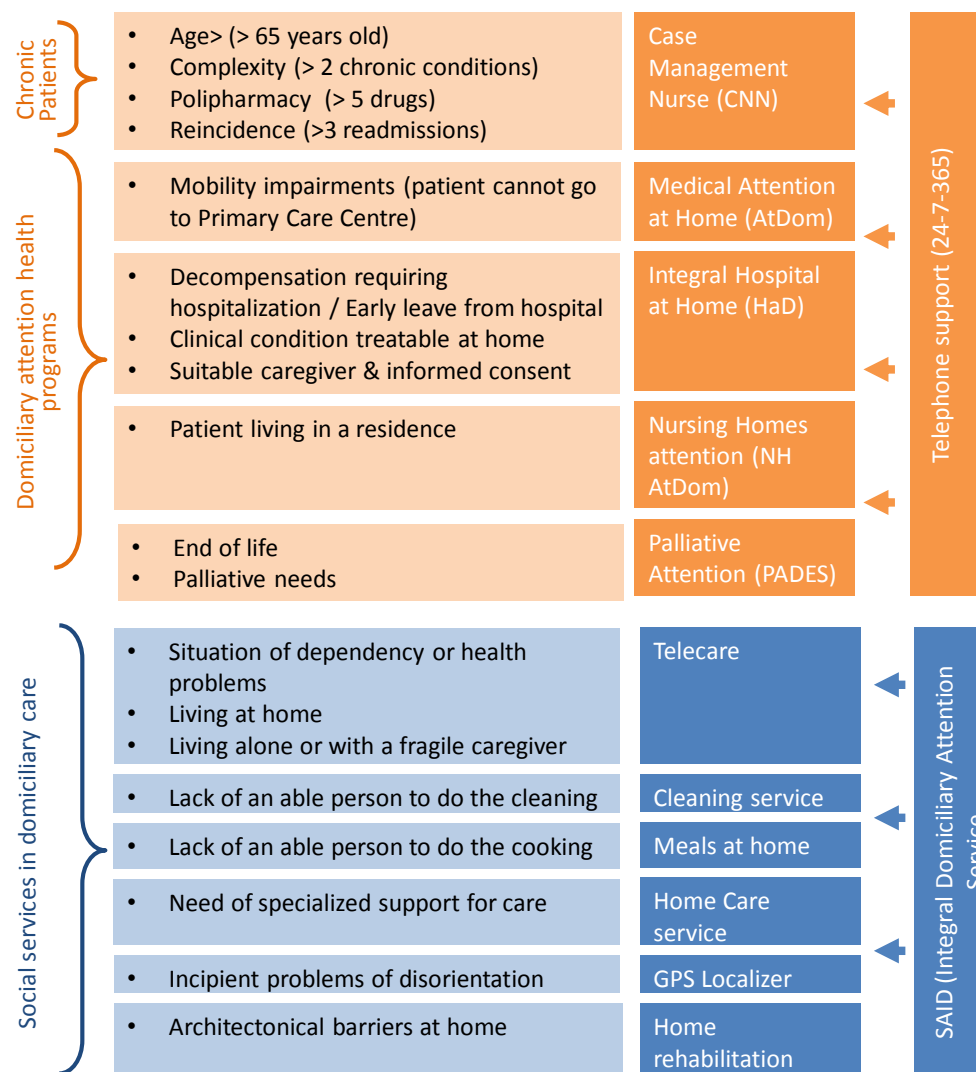
In order to achieve these objectives, BSA has developed a model in which the patient is at the centre of the attention process. The care process comprises care pathways between different services integrating both healthcare and social care.

In relation to healthcare, chronic patients can access different social and health services (see Figure 4) responding to their specific needs.

The MAMCC is addressed to patients stratified as CCP: i.e. patients that have been hospitalized at least three times from the same chronic condition and accomplishes a series of previously established conditions (above 65 years old, with 3 or more chronic conditions and taking 5 or more drugs). When any of the professionals treating the patient (primary care doctor, internist doctor at the hospital or specialists) identify compliance with the conditions established by the programme different services comprised in the MAMCC can be activated to comply with the patients' needs.

At the centre of the model there is the Case Management Nurse (CMN), a common resource for all CCP which ensures the continuum of care. This is complemented with different programmes addressed to attend the patient in their more immediate context and, in this way, avoid institutionalization and hospitalization: medical attention at Home (AtDom), Hospital at Home (HaD), Nursing Homes attention (NH AtDom) and Palliative Care Programme (PADES). Besides, patients have access to telephone support 24-7-365. In addition to this, patients living at home and with social needs due to illness or disability can also benefit from different services providing social care and support on a regular basis: tele-care, cleaning service, meals at home, home care service, GPS localizer Home rehabilitation service.

Figure 4: Services provided by BSA



Source: Author elaboration based in information provided by Badalona Serveis Assistencials.

### Case Management Nurse (CMN)

Chronic patients have a specialised nurse assigned to them: the CMN, a central figure in the model of care to CCP. This healthcare professional makes a proactive management of the patient, both from a preventive perspective (controlling the situation of the patient and taking actions to avoid clinical decompensation) and from a reactive perspective (reacting as quickly and effectively as possible when a decompensation takes place).

Once the patient has given informed consent to enter the programme, the CMN visits him or her at home and conducts a comprehensive evaluation of the patients' needs both from the medical and social point of view. From then, the CMN will be the person in charge of the care of the patient, guaranteeing

the continuity of care and offering a proactive attention. One of the managers of BSA formulates this as follows:

*We call these patients CCP (Chronic Complex Patients) because they are complex and frail, and can easily experience new crisis. Exacerbations are usual and, therefore, they need proactive attention and acting quickly when a decompensation occurs (..) and it is important that they are attended by different professionals specialized in these type of patients. [IP03\_1]*

Participating in the programme entails:

- Urgent attention when needed (the patient has the mobile phone of the nurse and can call when needed)
- Regular monitoring of the patient
- Planning visits of the patient (unification or urgent programming of visits)
- Follow up when he or she has to be admitted to the hospital
- Health education of the patient and the caregiver

Besides, the CMN acts as a link between different professionals treating the patient (primary care doctor, specialists treating the patient, doctors and nurses at the hospital, social worker, etc.) and meetings are organised weekly between CMN and specialists in which a follow up of the cases is made and decisions to activate new cases are taken.

One of the main objectives of the MAMCC is, as it has already been pointed out, the reduction of acute episodes and the avoidance of hospitalization and institutionalisation. This is managed through different domiciliary attention health programmes (see Figure 4).

### **Home Care Attention (AtDom)**

AtDom is addressed to patients that cannot reach the primary care centre by themselves. In most cities this attention is provided by family doctors who reserve a part of their time to visit at home patients that cannot go to the healthcare centre. BSA model is different in that a specialised team composed by a doctor and a nurse take over the care of all these patients visiting them at their homes: medical and urgent visits are conducted by both professionals and the follow up visits are usually conducted by the nurse.

Patients visited at home can be chronic patients or not, although most of the patients under this programme have a chronic condition. In the case of CCP with reduced mobility the CMN joins the team. Entry to the programme can be either initiated by the patient, by a family member or by the physician. Acceptance in the programme depends on the physician assessment and the main criteria is the inability to move, which can be either a physical inability or a mental disorder. CCP under the AtDom programme receive a special attention in that:

- A specific team composed by a physician, and a CMN is in charge of their attention
- A thorough assessment of the patient needs is conducted
- Visits and monitoring takes place at the patient's home
- When a decompensation occurs, the patient has priority at the hospital, without having to wait at the emergency room



- Special attention is given to the caregiver, who receives health education both by the doctor and the nurse in charge of the case
- If the patient presents social needs they are also catered by the social worker from the primary care centre

### **Nursing Homes Attention (NH AtDom)**

Another programme of domiciliary attention is the Nursing Homes attention (NH AtDom). Usually old people living in nursing homes are attended by family doctors. Nursing homes are obliged to have a doctor, but only for a few hours, and when a resident needs medical attention they go to their family doctor at the primary health centre or, if the doctor is not available, to the emergency health services. In BSA these patients have a specialized team that is responsible of the care of elderly persons living at nursing homes in the region of Badalona. This team is composed of two doctors, a nurse and a person giving administrative support. They attend a population of 490 persons. These patients have usually complex chronic conditions, with functional dependence, cognitive deterioration and a high comorbidity. This team is responsible of the medical and nursing support for all these patients including:

- An integral evaluation of all the patients institutionalized: clinical, cognitive, functional, nutritional, mental and social evaluation
- A multidisciplinary care, in coordination with diverse specialists involved in the care of these patients (physiotherapist, nutritionist, cardiologist, etc.)
- Pharmacologic control of all the drugs taken by each patient, revising its suitability for the age of the patient, its condition and the interaction with other drugs.
- Monitoring of all the patients, with periodic visits to all the residences and urgent or semi-urgent intervention, avoiding the use of emergency services and hospitalization.

AtDom programmes enable the patient to get a more personalized attention, with a better monitoring of their health. It has also proved efficient in that it prevents hospital admissions, reducing visits to emergency and retailing pharmacological expenditure through pharmacologic control. According to one of the physicians:

*The objective is not just to reduce healthcare expenditure but giving the patients exactly what they need, avoiding decompensations (...) and preventing – which I think is the most important – hospitalization (...) If the patient is well evaluated, you know which treatments he has, and when he is ill you can act quick, preventing hospitalization or going to the emergency services. [IP08\_1]*

### **Hospital at Home (HaD)**

Chronic patients suffering an exacerbation or a decompensation can also be treated at home. Interventions can be of two types: hospital avoidance or early discharge. In both cases, the patient is treated at home. An interdisciplinary team is formed, composed by a physician, a CMN and other professionals as physiotherapists, specialised doctors, occupational therapist, etc. depending on the patient needs.

Through this programme, inspired in British models of hospitalization at home, BSA aims to provide hospital health services in the patient's environment. This implies an important change for the patient, who is treated at home not only when stable but also under unstable conditions, and has a more possibilities of recovery. Besides, attention at home prevents admission to the hospital for a number of patients that can be attended at home, which represents an important saving in terms of costs. Finally, this model enables physicians and nurses to work in health education with patients and their caregivers, preparing their care and anticipating new complications. The following assessment comes from one of the physicians interviewed:

*You take advantage of being at home to be able, somehow, of going further. Prevention has an important role, and if it's well done, you can avoid that the patient has the same problem again, or you can manage it. The more information the family has, the more tools they have to detect... As far as the system is concerned, you reduce drastically the number of hospitalizations and you reduce them to the moment in which the patient's situation is too unstable to be dealt with at home.*  
[IP05\_1]

The patient can be referred to the HaD service either by the AtDom team when a decompensation is observed, by the CMN or by the Hospital. The decision to treat a patient at home is taken under two main criteria: i) the clinical stability of the patient and ii) the social situation of the patient, which includes both the agreement of the patient and the existence of an able caregiver. The evaluation of the first criteria corresponds to the doctor, and the second condition is responsibility of the social care team, who determines if the patient environment is stable enough, if a caregiver exists and if the caregiver can look after the patient all day, being responsible of the health cures during the whole process. Hospitalization at home lasts, in average, up to 15 days in the cases of hospital avoidance and from 15 to 30 days in the case of early discharge. During hospitalisation patients receive the following attention:

- An assessment of the clinical conditions, from a global point of view, looking at the different decompensated conditions (medical, functional, nutritional, cognitive, mental)
- An individualized care plan depending on the clinical situation of the patient, in which visits can take place every 12 hours, daily or every two days
- Most medical proceedings (analysis, electrocardiograms, etc.) conducted at home. If needed, the patient is taken to the hospital to carry out proves needing special equipment (radiographies, tacks, etc.)
- Continuous follow up, with weekly meetings of all professionals involved to revise the therapeutic planning
- Special attention to the caregiver, who receives sanitary education from the nurses, in relation to the care of the patient (mobilisation, hygiene, nutrition, medication, etc.) and also to the prevention of future decompensations

### **Palliative Attention Programme (PADES)**

PADES is conducted by teams specialized in giving support at home to complex chronic and geriatric patients in need of palliative care. A multidisciplinary team attends the patient at home or at the nursing home offering care and support at the end of life. This team works in coordination with primary care

centres, the hospital and the nursing homes, and patients with need of a palliative treatment are derived to these teams when needed.

### Telephone support

Patients participating in any of these programmes have at their disposal a telephone number which is operated 24-7-365. This telephone is attended by the doctor on call located at the Socio Health Centre. The kind of support given is varied, and can go from telephone support to the activation of urgent services, which can imply a visit to the patient at home or sending an ambulance to take the patient to the hospital for emergency care. Being an internal service, the doctor will have access to all the information of the patient, and can give a personalised attention to patients calling to the emergency phone number.

This support plays a key role in the programme. It is an important element for the reassurance of the patients, who know that they can be attended immediately by a professional if they have any need, and that emergency services will be activated whenever are needed. As one of the managers of BSA notes:

*Having access to a doctor on call, and knowing that this doctor knows their clinical history provides great assurance to patients. With this service we avoid many visits to emergency services, because many times the problem can be solved by telephone.... I mean, these persons are... complex, dependent... and they are not in a normal situation, they are not autonomous. [IP04\_1]*

### Social services in domiciliary care

In parallel to medical services, CCP also benefit from social services in domiciliary care. Integration of medical and social care services is especially important in the MAMCC model. If the priority is to take care of the patient at home whenever it's possible, it is important to provide enough support for all the needs that the patient and the caregiver may have, not only from the medical point of view but also from a social perspective. Thus, the patient's needs will be evaluated and services provided according to their needs. The importance of the integration of services is justified by the manager of the programme, who explains:

*These patients are persons with a chronic condition, assistance must be available for acute situations and act when a crisis occurs, and afterwards there are other professionals involved. These patients need attention related to cures, education, social attention, they don't need the doctors so much [IP03\_1]*

This is possible because of BSA status as a municipal company in charge of both social and health services in Badalona. Social services include telecare, cleaning services, home care services, meals at home service, GPS localizer and the home rehabilitation services and are an important aid for CCP living at home.

Services are centralized in the Integral Domiciliary Attention Service (SAID) that manages all the services prescribed in the city. Thus, differently to what happens in other places, in Badalona all the services included in the portfolio of Social Services can be prescribed by the professionals working at the primary

care centres and they can be integrated as a complement of healthcare, which is especially useful in the case of CPP being treated at home.

TeleCare is the most extended service. It's run by Spanish Red Cross and consists in a communication device that the person carries permanently (as a bracelet or a collar) and can activate easily pressing a button if in need of assistance. When the person presses the button a professional from the call centre contacts him or her through a microphone and activates the mechanisms to solve the situation that caused the alarm. This programme has a big acceptance among population and gives confidence to people living alone, since they know that if they have any problem an emergency service will be activated immediately.

Cleaning services are the second more requested services, and consist in a weekly cleaning service available to persons living at home with difficulties to do the cleaning by themselves. Dependent persons, who are not autonomous to do the shopping or are unable to cook can also get the meal at home service. This is one of the most demanded service, though it covers only a small part of the demand, and it provides a complete daily lunch which is delivered at home three days a week. The Home Care Service (*Servicio de Atención Domiciliaria – SAD*) consists of a family worker that assists the patient following a schedule defined according to the patient's needs which can go from personal attention (hygiene, mobilization, medication) escorting the person (to run errands or to do some exercise) or the development of tasks of health education.

All the services mentioned above (TeleCare, cleaning services, meals at home and SAD) are social services guaranteed by the Department of Social Welfare at a regional level. Special attention shall be given to the Integral Home Care Service (Integral SAD), a service launched by BSA for patients hospitalized at home. This service is aimed to assist persons hospitalized at home during the first two weeks and offers the support of social services in a short period of time. Through the Integral SAD, a special support can be offered precisely at the moment when the patient is more unstable and the workload for the caregiver is higher.

This service is specific of Badalona, and it has been designed to complement the IHH programme. Usually, home care services have a long waiting list, and patients hospitalized at home cannot wait. To be able to give a quick response to this situation the SAID blocks 75 hours a week of Family Worker that can be used to satisfy the needs of patients being treated by the IHH programme. This service is activated immediately and it lasts a short period of time (up to two weeks).

It is in the Integral SAD where a more intense interaction between health and social programmes occur. During two first two weeks after leaving the hospital the patient receives an comprehensive support that takes into account all his or her needs and implies the interaction of different professionals. Physicians, specialists, nurses, social workers and family workers coordinate and work together to offer a stable environment giving support in all the different needs not only from the health perspective but also in the social sphere. A doctor participating in the IHH programme explains how it works:

*When we have an acute situation it needs more support to the caregiver than usual. Then the Integral SAD is an opportunity to activate the hospital at home, since it gives support during two weeks to the caregiver, which is the period in which the patient is more unstable (...). When this service is activated, the nurses can work with the caregivers, focusing in hygienic issues, mobility, etc. and interact with them giving advice and detecting risks. It's a real interaction, and usually the family*

*worker is also involved. And each case has a different objective, depending on the situation of the patient. This service is probably the one in which most interaction occurs between health services and social services. [IP05\_1]*

### 3.2.2 Self-management interventions

#### *Description of self-management interventions*

Self-management interventions are basic for all CCP, but more especially for those being attended at home, both in the AtDom and in the HaD services.

For patients treated at home attention starts with an evaluation of their health and social situation. This evaluation is conducted by the CMN in the home of the patient. During this evaluation, a thorough analysis is conducted both from a health and a social point of view, measuring issues as the level of autonomy for daily life and identifying social risks and analysing the environment of the patient. The interview with one of the nurses interviewed indicates that it is very important to conduct this analysis at home, because the needs of the patient can be better identified and, thus, it is possible to define which education is needed to improve the self-management of the patient:

*We think first visit is very important and it must be done at home, because then you can see which is the social situation, the environment, if the patient is ready to follow our instructions, if he takes the medication... This is an important issue, because when you are at the consultation they say <yes, I take this, I take that> but when you go to their homes and open the medicines' cupboard it's a mess and you see that there are many things they don't take, o that they don't do it well. [IP14\_01]*

Based on this information, nurses handle the education of patients and caregivers. This education is highly personalized, and it's objective is to teach patients to take better care of themselves.

Caregivers play a central role during all this process. Nurses pay special attention on establishing good ties with caregivers, since when the person is at home, they are in charge of their care. Sometimes the role of the caregiver is a difficult one, because patients with chronic conditions may be difficult to handle and then nurses have to pay special attention to caregivers. This support combines both health information with emotional assistance. During the visits, nurses give advice to patients and caregivers on how to take care of themselves. As one of the nurses explains, sometimes this advice may be a simple one, but it's very appreciated by patients because it helps improve their quality of life. In other occasions, instructions are given to register their condition, so a good monitoring on the evolution of their health can be performed:

*We conduct health education of respiratory patients, and explain them about the changes in the sputum, or the need to put three pillows instead of one... these things, small things of daily life that can be silly things but they appreciate... And with cardiologic patients, we tell them to weigh themselves three times a week, and register their weight, and when they gain weight they have to call us. Oedemas, blood pressure... Many of them have a pulse oximeter at home, they buy it, the blood pressure monitor... and they call you anytime they register a strange value... [IP14\_01]*

But many times emotional support to the caregivers is needed to ensure they are able to continue taking care of the patients. Chronic patients visited at home have a very low level of autonomy, and they depend highly on their caregivers. However, many of these illnesses also affect the character of the

patient, and sometimes they will not listen to their caregivers. In these situations, nurses can play a very important role, reinforcing caregivers and offering them resources and healthcare education so they can feel confident with the care process. As one of the nurses reports:

*With patients we do a lot (of education) and even more with caregivers. Because many patients have dementia and the caregiver is very important, because they are not autonomous (...) Besides, with all this medication... The caregiver has to be reinforced with our visits, because there is a link between patient and caregiver that with those chronic illnesses, specially respiratory, they are patients with special character, and sometimes they don't listen to their families, but we try to involve caregivers in the cures, and many times it's the caregiver who phones. And they call us, and ask things about the cure. Caregivers are very comfortable and happy with us, and the tie with the caregiver is very important. [IP14\_01]*

All these interventions to train the patients and help them take better care of themselves are critical for the care model defined by BSA. When patients are attended at home they learn better how to take care of themselves. If this process is sustained over time, patients are more confident and have a better knowledge of their illnesses, so when an exacerbation occurs, they know better what to do and their treatment is easier. Besides, all the education and knowledge about their care process they obtain when they are treated at home is also useful when they get better and this understanding of their illnesses benefits primary care attention teams. A physician reports in this context:

*When an exacerbation occurs, we have detected that in the continuum, most health education we have conducted before has been assumed. It's one of the opportunities of home care attention. When you have to do it in a moment of crisis is stressing, but after that, in the continuum, it's a good experience, and this education lasts over time. And after that, primary care teams manage all the rest. [IPO5\_1]*

There is also a need for efficiency. AtDom teams have limited time to attend all the patients, therefore it is necessary that the patients and their caregivers are as much autonomous as possible, and are able to take care of themselves. Moreover, the need to work for the autonomy of patients is confirmed by one of the nurses interviewed, who insists in that patients have to be responsible of their own decisions, and the medical team's role is to help them to understand their affection and to take decisions by themselves. The following quotes from a physician and a nurse illustrate this idea:

*Nurses teach the patients how to take care of themselves, because if not we would have to go every day to do the cures. In these cases, the nurse shows them how to do the cure, because if it's a daily cure we cannot go every day. We can visit the patient at home maximum two times a week, and the nurse teaches them so they can conduct a good cure. [IP07\_1]*

*I think that you have to know the patient, and help them understand in which situation and in which moment of the process they are, and what decisions have to be taken. Help the, because they are the ones who have to take decisions. And somehow take the reins of their illness and decide where they want to get and what they want to do (...) We have to work all these aspects so they reach the maximum autonomy and can have the better health state as possible in their condition. [IP14\_1]*

In fact, the close relationship established by healthcare teams and patients has been effective, and, according to one of the nurses interviewed, this has resulted in a reduction of visits to emergency services and of hospitalizations.

*From the moment we started with case management at home we've seen a reduction in the number*

*of visits to emergency services, in the patients coming to the consultation, and also a reduction in the number of hospitalizations, because they don't arrive here in so bad conditions. [IP14\_1]*

### *Main drivers and facilitators*

Success self-management depends on a wide range of factors, some of them related to the health system and others to the patient. According to the persons interviewed, the main drivers for self-management interventions are: i) the coordination between professionals and levels of attention, ii) the support to patients and caregivers and iii) the implication of the patient and their family and the adaptation to different patient profiles.

#### i) coordination between professionals and levels of attention:

Interventions addressed to CCP are treated by different professionals (physicians, nurses, social workers and family workers) and different levels of care (primary healthcare, hospital and specialists). The coordination of all these professionals and their joint work plays a key role in the feasibility of the domiciliary attention programmes.

In fact, as many of the persons interviewed pointed out, coordination between the social and health services is critical to provide patients being attended at home a stable support to their needs - which will change over time - to guarantee a continuum of services at the different moments of the process and to provide guidelines to the patients and caregivers.

Before an emergency occurs, it is nurses, social workers and family workers responsibility to offer support to patients and their families, changing habits and giving them basic guidelines for care. If this work has been correctly done it is easier to avoid hospitalization and activate domiciliary resources. During the crisis, it is the physician and the case management nurse who take the lead of the intervention in a double direction: the stabilization of the health problem and the education of the patient and caregiver to guarantee the continuity of the cure after their intervention. Once the intervention has finished and the patient has been discharged, it is the team from primary attention and the family worker who take over the responsibility over this patient. At this moment, it is very valuable the educational work that has been conducted during the domiciliary attention. The experience from the teams involved in the HDI programme is that caregivers who have been attended at home have a better understanding of their role and assume better the cures than the ones staying at the hospital.

One of the services that facilitate this coordination between social and health systems is the Integral Service Of Domiciliary Attention (SAD Integral). This service, which is activated for a couple of weeks during the process of hospitalization at home, allows the nurse, the family worker to work together, aligning their interventions and explaining the management of the cures to the caregiver.

#### ii) support to patients and caregivers:

During all this process special attention is given to the education of patients. A close relationship is built between caregivers and nurses, who give guidelines to the caregivers on how to take care of the patient, on how to administer medication, how to observe changes in the patient and identify if something goes wrong, etc. They also give emotional support to the caregivers to help them endure the changes in the



moods of the patient as well as to cope with the overload occasioned by the cures. And, if they see that the caregiver is too stressed, they may prescribe a short internalization so the person in charge of the care can rest for a while.

The nurses interviewed insist that for the success of self-care it is essential the existence of a proper caregiver. Domiciliary attention requires a stable family environment and that the caregivers understand and assume their role. This is easier among chronic patients than in acute patients, since there is usually a caregiver who is already used to take care of the patient. It is also easier in the case of early discharge, when the patient has spent the initial crisis at the hospital and the family environment has been able to cope with the situation and they get the main guidelines on what they have to do before leaving the hospital.

Another factor that has been identified as a facilitator during the interviews with the nurses is the support given to the caregivers, both from the health services (through an emergency phone or through the assignation of a CMN who is in charge of the patient) and from the social services.

### iii) adaptation to different patient profiles:

The accomplishment of the self-management processes varies, and depends on different factors.

One of the influencing factors is related to social class. Badalona has a very diverse population, from medium and high socio-economic classes in the neighbourhoods in the city centre and close to the coast to low socio-economic classes in the suburbia districts. The professionals interviewed identify important differences among patients depending their socio cultural and educational levels. Some caregivers have big difficulties to understand the interventions, and, even though they may show good disposition, they experiment problems to manage care. Habits are difficult to change, especially in relation to alimentation. Architectural barriers can also be a problem, moreover in the neighbourhoods situated in the hill and among patients living in high floors without elevator – which are quite usual in some of areas of the city - , preventing patients to follow guidelines related to exercise. As a physician explains:

*Some caregivers have difficulties to understand the intervention on the one hand, and on the other hand there are resistances to change habits. They are used to do things in one way and when you say “now you’ll move him this way” it is difficult for them to understand the cure plan. It’s not that they are not willing but that they have difficulties to understand. Especially during first days of the intervention, when they get much information. [IP05\_1]*

Another big barrier is gender. Among many of the population treated by BSA – mainly old population and from low socio-cultural levels – gender roles are very pronounced. And, though there are cases of husbands taking good care of their wives, the professionals interviewed observe that it is more common for women to take on with the care of the patient than it is for men. Some man are reluctant to assume care duties, and they may feel relatively comfortable with issues related to the administration of medication rather with other tasks having to do with the hygiene, alimentation or cures. Several anecdotes were collected during field work, as for instance the case of a diabetic woman who got really ill because her husband keep feeding her with precooked dishes or that of a blind man who had always been cared by his woman and even when she had a terminal cancer insisted in that she had to assist him



in the shower every day and he was reluctant to have a family worker helping them because he assumed “it was his wife duty”. A nurse talks about it as follows:

*When it is the husband, especially when it is the husband, it can be hard for him. Men have more difficulties to do these type of tasks. Women, I don't know if it is because we are more prepared to take care, has a better predisposition. When it comes to medication, cures, hygiene... all these tasks are better assumed by women. Husbands usually need some kind of help. They can usually assume medication, but sometimes they also have difficulties. They see it as an additional work and they tell you that they are not used.. “I've been born to work, not to care”, they say. [IP12\_1]*

These differences prove the importance of a good selection of the patients treated in HDI programmes, for which it is important to have a deep knowledge of the patient and the family, which in the case of chronic patients is feasible because there is usually a long lasting relation between the patient and professionals in charge. The role of social workers and nurses is of high importance, and the success or the failure of the intervention will depend highly in this evaluation.

However, when professionals identify difficulties to the understanding of their guidelines, they usually adapt the care plan to each patient. The main strategy to overcome the barriers in understanding is to simplify and to dose the guidelines given to the caregiver, and, if necessary, to programme more frequent visits. Once the professional sees that the treatment has been understood, new advice is given in order to ensure a better treatment of the patient. The duration and periodicity of the cures is also adapted to the possibilities of the caregiver, using more durable materials if necessary and activating the support of a family worker to assist the family in the cure of the patient. As a physician explains:

*[Sociocultural level] is very important. We try to minimize it with more visits, or simplifying guidelines, giving them in sequence... We use strategies to mitigate this factor. But the truth is that, depending on the environment, you may require more visits or evolution is slower. [IP05\_1]*

### 3.3 Leadership and governance

#### 3.3.1 Organization and governance of the integrated system

BSA as an Integrated Care Organization provides different levels of attention related with healthcare (primary care centres, hospital) and social care (social care centre and home care services)

According to the documents analysed (*Strategic Intelligence Monitor on Personal Health Systems Phase 3. BSA Case Study Report*) all these centres operate under the same governance structure led by a Board and a General Manager who is responsible for three main areas (Care, Strategic support and Structure support) and supported by a Quality and IT department and a Research and Innovation Department.

Figure 5: BSA Governance structure



Source: Strategic Intelligence Monitor on Personal Health Systems Phase 3. BSA Case Study Report.

It is worth pointing out that there is no division by centre type (Hospital, Primary Care or Social Care) but there is division by Clinical, Social and Nursing areas covering the different type of care provision from primary care to specialist care, as well as social care services. Furthermore, the president of the BSA Board is the mayor of the city, which fosters an alignment between local health and social policy on the one hand, health and social care services provision on the other, also facilitating a legal framework to coordinate health and social care services.

This governance setting enables the collaboration among the different providers and professionals (health and social care professionals) to ensure the continuum of care through inter-professionals teams working together developing care pathways. The Chronicity Team is composed by a multidisciplinary group of experts including physicians, nurses, social workers, family workers, maintenance professionals, IT staff and clerical workers coming from primary care, hospital care and intermediate care. This team enables health and social care professionals to be effectively involved in all levels of care delivery, including social care.

### 3.3.2 Cooperation with stakeholders

The model is also based in the cooperation among different stakeholders in the provision of the different services addressed to the CCP.

The commitment of BSA goes beyond the boundaries of the organisation, and BSA also coordinates its activities with other public providers, such as Institut Català de la Salut (*Catalan Institute of Health*) and l'Hospital Universitari Germans Trias i Pujol.

In some cases services are the result of the cooperation between public and private sector. This is what happened with the Integral HaH Service. This service was initiated in 2009 as a result of the collaboration between BSA and a private enterprise called *Fisiogestion*, in charge of rehabilitation services. The initial project was aimed to care for patients with health risk in their own environment and it has evolved into a specific service of home hospitalisation for chronic complex patients.

Another programme resulting from the collaboration with the private sector is the GPS Localizer (*Localitzador de Persones – LOPE*), an initiative of the Association of relatives of Alzheimer (*Associació de Familiars d'Alzheimer*) which is currently managed by Red Cross (*Creu Roja*), a NGO of national scope.

It is also interesting the case of the Home Repair Service (*Servei d'Arrengaments*), which emerges from a collaboration between BSA and a Private Foundation (*Fundació Roca i Pi*). This foundation has among its founding principles to help persons with socio-economic needs in Badalona, especially infants and old people. The foundation was launching a project of reforms to help people without resources to habilitate their residences. At the same time, BSA detected that many of their users could not stay at their homes because of simple architectonical barriers (for instance, not being able to enter into the bath) but they did not have the budget nor the professionals to make these arrangements. As a result, BSA and Roca i Pi signed an agreement to provide this service to persons who needed a reform to continue living in their houses and could not pay for them. This agreement is described by a representative of the social staff in those terms:

*The city council decides to incorporate home reforms as a complementary service (...). Then, Roca and Pi Foundation had the idea of doing something similar, together with the instalators guild and the Institute Gaudi, and they had the money to do it. We had the personnel and the users, and they had the money. Then, we reached an agreement and we created the Angels project, which is the result of the cooperation between public and private sector. [IP01\_1]*

### 3.3.3 Facilitators and barriers

The deployment of the integrated model promotes the coordination across different settings and levels of care in order to ensure that patients and their needs are at the centre of the health and social care provision.

According to the documents on BSA model (*Study of Integrated Care in European Regions: Case Study of Badalona Serveis Assistencials*) the main drivers of this transformation has been the reorganisation of services and policy commitment. The philosophy of putting the patient at the centre has been pushed forward by BSA managers and local authorities.

However, as any model that implies a new organisation it has also experimented important obstacles and resistances.

During the interviews implementation process has been described as a complex one that has encountered resistances both from the health system and from the social services. Some of the barriers identified during the interviews are related to i) cutbacks in health and social services, derived from the economic crises, ii) the different impact of integration in the health system and the social care system, and iii) resistance from professionals involved

#### i) cutbacks in healthcare and social services:

With the emergence of the socio-economic crisis, cutbacks in health and social services have negatively affected the programme, since many programmes have seen their resources cut, specially human resources. This is the case, for example, of NH AtDom where there used to be a team composed by the director of the programme, a doctor working full time and three nurses, while now there is just the

director, one nurse and a doctor that works part time in the programme combining it with the attention to patients in the residential centre.

Social Services have also experimented important cutbacks. The Home Care Service had to be stopped during a whole year and it only attended urgent cases, and most of the services provided by BSA have long waiting lists, similarly to what happens in the rest of the country.

ii) different impact of integration in the health system and the social care system:

Another barrier has to do with the different impact of the integration in the two systems. Health professionals have benefited from integration in that the management of the social services portfolio by BSA has given them access to a wider range of resources which they can activate without any intervention from social workers. This is a distinctive trait of Badalona since elsewhere social and health services are separated, and social services can only be activated by professionals working at the social services.

However, for social services' professionals integration has been seen as a loss of control over their resources, because with the integration all services are managed in a centralized basis from the SAID. Social workers opposed to this system from the beginning, and although during the years they have grown more accustomed to the centralization of services, there are still strong reluctances towards this system. The interview with one of the managers of BSA help to illustrate these resistances:

*Social workers decide which services from the portfolio should be applied. But they don't manage the case, because the service is derived to the SAID (Home Care Management Centre), who is responsible of its activation and follow up. Social workers complain that they cannot do the follow up of the case. When a service is assigned it is transferred to the SAID and they kind of lose it. And this is a difficulty, because the social worker, who is the person in charge of the follow up of the user loses the reference of the service that has been applied. [IP06\_1]*

Besides, for the social services integration has not involved access to new resources. Differently to what happens in the health service, that can activate social resources, professionals working at the social services have no relation with the health services and, even if they detect a need, they don't have the possibility to act rather than derive the patient to the health services. As one of the managers of BSA explains:

*It's difficult for a social worker from the local council to activate a health service (...). When someone asks them some service, they can surely detect if there is a health problem, and therefore they should be able to activate the resource, programming a visit with their family doctor or going to the doctor "please, make an assessment of this person, because I've detected..." [IP04\_1]*

iii) resistance from professionals:

These differences have derived in conflict of interests between social and healthcare professionals, and many of the barriers related by the interviewees have to do with the resistance of professionals involved in the care of the patients.

In the beginning, the new model experimented important resistances among social workers, who were against the management of the portfolio of services by an enterprise from the health sector. They were reluctant to the idea of BSA (a municipal company, and from the health sector) managing social services. There have been many meetings with social workers from the city council explaining the benefits of the model but, although it's been 12 years since it was implemented, according to some of the interviewees some of these resistances still prevail.

Another resistance came from the social workers from the National Care System (*ICS - Institut Català de la Salut*).

Currently Badalona has two health service providers: BSA and ICS. BSA is a private organization funded by public capital which manages, the hospital of Badalona 7 primary care centres, a socio health centre and a sexual and reproductive care centre. ICS is the main public health provider in Catalonia and manages 7 primary care centres in Badalona, as well as the Hospital Germans Trias i Pujol. The social services portfolio is managed by BSA for all the city of Badalona. Initially social workers at the ICS health centres prescribed social services from the council portfolio. However, three years after the system had been implemented they complained that this was not their job and it was decided that prescribing social services was a competence of the workers under Social Services Department. Therefore, nowadays integration of health and social services is only possible in the part of the city managed by BSA, but not in the part managed by ICS.

As a consequence, Badalona is now divided in two different areas in which the population receives different kind of attention. In the BSA territory, an integrated model is fully implemented and users can access to social services both from the Health Centres and the Social Services. Instead, in the ICS territory users can only access to the portfolio of social services if they go to Social Services, and they cannot benefit from complementary services like the Medical Attention at Home Programme or the Integral Home Hospital Service. As one of the managers of BSA notes:

*Any social worker from BSA, regardless of where they are – at a primary care centre, at the healthcare centre, at the domiciliary attention teams or at the hospital - can prescribe a social service. This is particular of BSA, because the social workers from the ICS don't want to do it. It's not that they can't, it's that they don't want to do it. Therefore, petitions of services from non BSA territory have to come through the local council social services. [IP04\_1]*

The effects of this separation was illustrated by one of the persons interviewed, a caregiver who lives in ICS territory. Under the regulation that enables citizens to choose their doctor, this person has her mother attended in a primary care centre run by BSA. However he cannot benefit from the all the services offered by BSA because he does not “belong” to BSA territory. This fact is seen by this person as an unjustified difference with other users of the same city that receive a different service than he does.

Finally, domiciliary care has also brought resistances among medical staff. Domiciliary attention requires a new vision of care, which not all doctors are prepared to give. Besides, the new teams of homecare attention imply that patients change doctor when they start to be attended at home, and some of the doctors perceive it as an intrusion and don't agree with their patients being attended by another professional.

### 3.4 Workforce

#### 3.4.1 Changes in existing roles

The implementation of the MAMCC has implied substantial changes for professionals working in the healthcare system.

Different persons interviewed share the idea that a different approach is needed to attend this type of patients, and that a change has been made towards a more integral care. This change has been implemented from the medicine faculties themselves, with the introduction of new subjects of community medicine that did not exist in the past. Specialists treating different affections from the same patient have to communicate among them, and professionals have to work together in order to need the needs of their patients and be able to respond to an ageing population with increasing demands. Nursing professions have also changed, and prevention and education tasks have recovered a central part in their role. These changes are well illustrated by one of the managers of BSA:

*The way doctors work has changed. Before, we were educated at the universities to heal, and now we heal little (...) We relieve. Many illnesses that used to be fatal, now don't. An oncologic process, for instance, has a different survival patterns, and what we are doing is making chronic a patient that has an illness that won't kill him but will be there during many years. Or VIH, that use to be a terrible disease and with new treatments those patients are chronic. But this chronicity requires different situations. They have social problems, they may have a diabetes and have to be educated, .. and who will do it? The doctor? No, the nurse. And at this time controlling diabetes is much more important than the illness. And then, there will be a moment he won't be able to work anymore. And at this moment he will need counselling, and the social worker will be more important than the doctor or the nurse. Everyone has a different leadership. The leadership of the doctor will be in the diagnosis and prescription, but after that other professionals will have a more important role. This is a work of complementarities, and pretending that the doctor covers everything is impossible.*  
[IP03\_1]

*In the nursing profession one of the most important parts is education, information and prevention. In these figures I think that we have given more importance to this tasks, which were somehow hidden – Before, it was only techniques, drug administration, cleaning... now, education, training and prevention have been given more importance.*

[IP03\_1]

#### 3.4.2 New roles

There are two figures that have emerged clearly in relation to the attention to CCP and that have been clearly identified as new roles by the persons interviewed: the Domiciliary Attention Physician and the CMN. Both of them require specific competencies and training to be able to successfully fulfil their tasks which entail a different profile.

The Domiciliary Attention Physician is clearly identified as a new role by the interviewees occupying this position. Domiciliary Attention is seen as a new paradigm, or a new model, that implies doing the same things but in a different manner: this is, attending patients at home but providing them the same

attention as if they were at the consultancy or at the hospital. It requires, therefore, a new vision in which the attention process gains relevance, and where the physician needs to understand all the process as a whole, identifying the key aspects and sharing the responsibility of the care with different professionals and with the patient himself. On of the physicians formulates this as follows:

*It's a new paradigm. As an specialist I see that if medical services are able to do all the interventions we carry out at the hospital in the patient's environment, it is a new model that requires, mainly, a new definition of resources. It's not complementary or secondary, it's a new resource and a budget has to be defined, a specific staff and new protocols. We have a hospital-centred vision of beds, guards, etc. and we should change to a process framework: we should take the process and it's key issues and see how we could adapt it to each of the phases of shared attention with the patient and its environment. It's a vision that changes the way we are doing things. [IP05\_1]*

According to the persons interviewed, not all physicians are prepared for domiciliary attention and a selection of professionals that are able to understand this new model and to adapt to the new way of working is critical for the success of the model, both at the AtDom and at the HaH.

Some of the persons interviewed speak of “vocation” as a pre-requisite to conduct domiciliary attention. Others emphasize the need to have competences as flexibility, team work, communication, empathy. A physician visiting patients at home is not anymore at the consultancy and has to adapt to the patient's environment. AtDom physicians have to work together with other professionals sharing the care process with the nurses, family workers and, even, the patient and caregiver. They also have to be able to build a close relationship with patients and caregivers, and, as some of the professionals interviewed explain, they end up getting to know the whole family and, even, visiting the persons living with the patient. Another key competence for these physicians is the ability to communicate, which is needed to make sure the patients understand what they have to do. These communication abilities are also important in conventional hospital or consultancy environments, but when the patient is staying at home it is of crucial importance that the cures are understood and that the patient and the caregiver know what to do or where to call if an emergency occurs. This implies, also, that the physician must be able to tolerate a certain degree of risk. Unlike what happens at the hospital, patients taken care at home are alone, and the physician has to be confident that they are able to deal with the cure. As a physician explains:

*You have to know the essential points of the process and know to what extent you can assume a professional risk, which is higher when you are working out of the classic environment of the hospital. One of the things we must be confident is that, when we leave that visit, patient and caregiver have understand the basic points of attention, because until next visit they will be responsible of the attention. We ask them to carry out tasks that up to now have been done by health professionals, in a different environment. We don't only move the intervention, we are giving the responsibility of the process to a caregiver environment that is heterogeneous and non-professional. Thus, you'll need strong abilities among professionals, who have to be able to know the essential points of the attention and to explain them to the caregiver. [IP05\_1]*

Professionals involved in these programmes explain that, when they started, they thought they would not be able to get used to this new model of attention. The two challenges the professionals interviewed recall as the main difficulties when they started with domiciliary attention are being able to take the risk of treating the patient at home and to build a personal relation with the patients attended at home.



In BSA model, AtDom teams take care of all the patients that have to be visited at home. This means that, at least during the attention is conducted at home, the family doctor of that patient is substituted by the AtDom doctor. At the beginning this can be complicated, because, as one of the physicians interviewed explains, it means getting to know an important volume of patients all at once. Since the relationship between doctor and patient is particularly important in this kind of service, it can be difficult, at the beginning, to get to know all the patients and build a strong relationship, gaining the confidence of patients who may have been visited by another doctor during many years. The experience recalled by one of the physicians is clear enough:

*I remember that, at the beginning I used to think: I'm goanna die. When I started it was my idea, because no one wanted to do it, and I thought a change would be interesting. But at the beginning I thought I wouldn't make it. It's 100 patients, and only 14 were from my previous patients. And I thought, I won't be able to do it. [IP07\_1]*

Attending the patient at home is also difficult because it means that the doctor has to be able to trust the patients and their caregivers ability to take care of themselves when no one is at the home. According to one of the physicians interviewed, not any doctor is able to coexist with these risks. To be able to take care of the patient at home it is important to be confident in that the critical points of the process are guaranteed and to be able to delegate the responsibility of care in the patient and caregiver.

*There is a double challenge: the medical challenge of following the process correctly and that, if it doesn't go well I can assume it, and the challenge with the family, if they are doing it all right, or if it's going badly because they are not doing correctly their tasks. [IP05\_1]*

Initial training included assistance to conventional courses as well as in the job training, by accompanying other professionals doing this tasks. However, not all the training initially planned has been imparted and the mastering of the role has come mainly through experience, which one of the interviewees situates in a minimum of two years after starting the programme.

The CMN is the other new role created in relation to the treatment of chronic patients. This role is defined in the documentation (*Study of Integrated Care in European Regions: Case Study of Badalona Serveis Assistencials*) as the professional that coordinates the care of patients with complex chronic conditions. This professional supports patients, family and carers during the continuum of care, coordinating the other health professionals and services provision and resources.

According to the persons interviewed, CMN are in charge of the coordination of the different teams treating the patients. They also empower patients fostering their functionality, comfort and independence. This professional is also responsible of the follow up of patients and family during all the process of care, independently of other resources and services they may need, integrating different resources and searching the most adequate and efficient to each person.

To do these tasks a highly experienced nurse is needed. The knowledge of the different professionals and teams working at the hospital is of great importance for these nurses to be able to do their job. For this reason, it is convenient that CMN have been working in different services and have a wide knowledge of internal circuits at the Hospital or the primary care centres.

These nurses are in charge of the monitoring of the patient, and they visit the patient on a regular basis. When an exacerbation occurs, they must be proactive and be able to act, assuming tasks that other nurses don't usually perform as administering certain drugs or conducting analysis. They also need to



have a thorough knowledge of chronic diseases, mainly respiratory and cardiology diseases, being able to auscultate a patient and identify possible problems during their visits. According to one of the nurses interviewed:

*The case management nurse has a complicated role, acting sometimes as a physician. It's not the concept, but, when you go to a house and evaluate the patient, you have to make decisions. In my case, for instance, when I see a patient and identify any complication I phone the doctor and explain her what I've found, I give her my opinion and, she tells me to go on. This, at primary care, would be impossible. Some colleagues still don't understand it, and they say they couldn't "Going there and dispense Urbason®.... "Well, this is what we do. You get there, you see that the patient's legs are bad and you put a Seguril®. Then you call the doctor.... And you have a nice bond with her, because she knows you and she knows what you are doing. This was not the way of doing things before. You have to be autonomous.. I'm going to a house and I'm able to conduct an analysis at any moment. [IP14\_1]*

Finally, the CMN also a profile with a need of specific competences that go beyond professional knowledge and experience. They have to be able to work in interdisciplinary teams, communicate both with patients as with doctors and specialists, create a strong bond with their patients and be highly autonomous and proactive.

### 3.4.3 Relationships between the different professionals involved in healthcare support.

All the services included in the MAMCC are aimed to an integration of chronic care. This entails a different organization of work, the emergence of new professional profiles and the appearance of new relational models among professionals.

All these changes represent a new culture of work and though, from a global perspective, it is evaluated very positively and it has also generated resistances and conflicts among professionals.

During the interviews conflicts have been pointed out in the relation between the different professionals involved: between specialists, primary care and specialists, nurses and doctors, physicians in domiciliary attention programmes and primary care physicians and, even, between the different professionals working at domiciliary attention programmes.

Many of these conflicts have to do with the limits of the intervention. For instance, some professionals working at primary care are reluctant to the idea of the domiciliary attention physicians visiting their patients and they sense it as an intrusion. In other cases, the inclusion of a patient in a chronic programme can be interpreted as a release of responsibility from primary care to specialist care, and when the patient is stabilized the family doctor may not feel prepared to treat such a complex case. A nurse formulates this as follows:

*It's ok, but somehow the primary care team gives up the patient, and since we control it, they kind of get lost. Then, I think that it's good that, when that patient is stable, and has not exacerbated during last year, goes back to the primary care team, because they should also be able to treat respiratory problems when they are mild. [IP14\_1]*

In other cases there can be conflicts in clinical decisions, either between different specialists or between specialists and primary care. In these cases, the intervention of the CMN is needed to conciliate the different point of views. As a nurse explains:

*The primary care doctor gives a treatment, thinking it's ok, but then the specialist says that that treatment is not used anymore, or that it is not correct... Then the specialists changes the treatment, and you have to go and speak with the primary care doctor and tell him to change the prescription because the one. [IP14\_1]*

Finally, one of the managers of BSA has also pointed out that there is a different culture of work between social services and health services that complicates the relationship between professionals. There is a difference in languages and in priorities, and also in the conception of the patient or the user of social services, which contributes to enhance the barriers between professionals. Health professionals are used to act quickly and to solve problems immediately, but once they have stabilized the situation, they withdraw. Instead, social services are used to long waiting lists and solutions are thought in a medium or long term basis. This manager formulates this as follows:

*When dealing with health decisions have to be immediate, while at social services it's not like this. I mean that, for us, there should be waiting lists and so on, but when a patient needs to visit the doctor, he goes, and that's the end of the story, and maybe he will have to wait 2 or 3 days but if it's an emergency he can choose between 80 hospitals in Cataluña. In Social Services things are not like this. Access to health services have been universal and free, while social services are universal, but not necessarily free, because users have to pay a part of the services. I mean, these are specificities you have to take into account and you have to know them before trying to do revolutionary things... It's important to be very careful in the interventions with social workers. [IP04\_1]*

### 3.5 Technologies and medical products

According to the documentation describing the model of integrated care (*Strategic Intelligence Monitor on Personal Health Systems Phase 3. BSA Case Study Report*), technological innovations have been one of the drivers of integration.

In 1995, BSA's strategic plan contained a specific ICT deployment plan, and since then it has always been a key element when defining the organisation's strategy.

At the beginning, the main objective was to solve the problems linked to that territorial distribution. In a second stage a new key objective appeared which was to become an IT leader in the region. And during the last 10 years, due to the different changes in funding model (from closed budget to capitated), another key driver appeared which was to increase the efficiency and the cost-effectiveness of the services provided, in order to deliver the best services as possible with a fixed amount of money globally or per citizen.

#### 3.5.1 Information systems

BSA organization is formed by 10 centres, which are widespread around the city of Badalona and two of them in two other small cities surrounding it (Montgat and Tiana). Even though distances are short it

was not secure to move all the patient data in paper from one site to another on a daily basis: the information was not available, it could be lost, there were a lot of duplicate tests and it was not efficient in terms of quality of care and costs for both the patient and the organization.

To solve these problems, an integrated **Electronic Health Record (EHR)** specific for BSA was implemented which enhances communication and information flows across the continuum of care and supports health and social care professional practice. The implementation of the EHR was approached in most cases through a step-by-step method to make the process easier on IT staff and users and to minimize the disruptions in care. Regarding the vendor selection the organization always chose best-of-breed, because at that time there were no reliable monolithic systems that could fit the organization's needs. It was done in multiple tender rounds and the solution was almost always chosen by internal user consensus. The deployment of the EHR has allowed BSA to implement an organizational and care model, which turns it effectively into an integrated care organization. BSA has achieved Stage 6 in the HIMSS Analytics Europe EMR Adoption Model (EMRAM)<sup>3</sup>.

According to the documents analysed (*Strategic Intelligence Monitor on Personal Health Systems Phase 3. BSA Case Study Report*), there have been many benefits due to the implementation of the EHR that are worth highlighting, especially as regards the improvements in healthcare: better coordination between the levels of care, an improvement with regard to organizational processes, and a noticeable improvement of the decision making process. All of these have led to a better quality of care with greater control and better results in the target population, making care delivery more efficient and allowing to develop new and better services.

However, professionals interviewed point out that, though a lot of work has been done in this field, there are still shortcomings and the organisation is working to improve its information systems. The main difficulty derives from the coexistence of different information software. The Catalan healthcare model is a multi-provider one integrated in a unique public network. It enhances the autonomous management of each provider, whereby providers are free to select their information systems. Primary care centres use the E-Cap (*Estació Clínica d'atenció primaria*), the programme most extended among professionals at primary care, which is also used by the Hospitals belonging to the ICS. However, the software used by the Municipal Hospital (GESDOC) is a different one, and the Socio Health centre belonging to BSA also uses its own programme. Therefore, different software are used to enter the EHCR. CMN are usually the ones that manage all this information, but it is usually complicated to find all the data from the different systems, that only are partially communicated between them. As one of the nurses points out:

*Another problem we have is related to software, which is dreadful. Look, at the hospital they work with a software called GESDOC. Primary care centres have another programme called ECAP and at "El Carme" (the Socio-Health centre) they use another programme. So, you can imagine. Doctors*

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<sup>3</sup> EMRAM is a comparative reference at European level on the adoption of IT technologies at hospitals, that allows directors and managers of the hospitals to compare and measure their progress in IT. Each year, directors and IT managers of the health sector in all Europe send their data on the adoption of EMR (EMRAM) for their comparison. The model of adoption of EMR (EMRAM) classifies hospitals according to their progress in 8 phases to create an electronic record for patients. Phase 6 is given to hospitals demonstrating physician documentation (structured templates), full CDSS (variance & compliance) and closed loop medication administration.

*come around and say they don't find the information from the specialist, and ask you to look for it. There are many programmes, and it is complicated for us, because we are the link among all of them. And still, at the ECAP you may find all the information from Can Ruti (the hospital from ICS operating at the area of Badalona), and we also have to look at it, because many patients go there... [IP14\_1]*

### 3.5.2 Shared Medical Record

BSA EHR exchanges information with the Catalan Shared Medical Record (HC3). HC3 gathers all documents containing relevant data and information about the status and progress of a patient during the care process, providing access in an organized manner, and always under the appropriate confidentiality and security settings, to the relevant information from the medical records of health centres from the public national health system of Catalonia.

According to the documents analysed (*Strategic Intelligence Monitor on Personal Health Systems Phase 3. BSA Case Study Report*), the HC3 makes it possible, through mechanisms of interoperability and by using standards between information systems, for individual electronic medical records from health centres in the public national health system to become compatible so that one can access both the clinical and health information from a patient at the place and time it is needed.

Healthcare professionals benefit from this system since it is a tool that provides updated relevant information to help make the best decisions regarding the diagnosis and treatment of patients. It provides a reference tool for the healthcare team, regardless of their geographic location and care level, to access information from patients, a factor particularly important when patients are attended by professionals from other health centres. It promotes continuity of care and improves the coordination between care levels including primary care and specialized care. It allows radiological images to be shared across several centres, a functionality that is already deployed in most of the hospitals and in all primary healthcare centres in the public health system. It decreases the time needed to make the radiological images available to healthcare professionals.

Citizens also benefit from HC3 since it reduces unnecessary duplication of diagnostic tests and saves patient trips to collect the results and bring them to his/her health centre. This is, according to one of the managers of BSA, especially beneficial in the case of chronic patients, who are spared of useless trips to collect information:

*We are working with a vulnerable population, frail in general, and it is important for them to avoid going from one place to another and visiting different service providers and collecting different papers... or duplicate papers because you have to present this paper here and this same paper over there... I think this is an important progress for the population. [IP04\_1]*

### 3.5.3 Tele monitoring

According to the documentation describing BSA model (*Strategic Intelligence Monitor on Personal Health Systems Phase 3. BSA Case Study Report*), one of the most important goals for BSA, is not only

providing integrated care but integrating better the tele monitoring tools in the healthcare services model.

Several **pilot programmes** have been carried out to implement technology as a complement to the care of CCP. During the interviews a specific programme on the use of tele monitoring with CCP was mentioned. During 3 months, patients were given a computer, a mobile phone and a medical device and were asked to register data about their medical condition. Physicians and nurses could then monitor the evolution of the patient from their consultation and detect potential problems. Those tools were considered as useful to control the patient's health conditions and to promote the empowerment of the users for the management of their own wellbeing. However, the results depended highly on the profile of the patients. For some patients it was a very good experience and found it easy to collect the data. However, other patients encountered difficulties to understand the instructions, or complained about the overwork related to collect periodically all these data or, even, were anxious about the process and were constantly checking the data and worried when the data they collected was not what they expected. The interview with one of the nurses illustrates how some of the patients reacted to these technologies:

*We had a programme and we put a pulse oximeter, a tensiometer and a weighing machine and several questions were made to monitor the state of the patients (...) and we did this during three months more or less. It worked well. When you got to your office in the morning, you put on your computer, went into the application and saw all the data of your patients. And you saw, for instance (...) if blood pressure was high, and then you could be more aware... The problem was, in my case, that in the part of Badalona where I am the educational level of the population is low, and they didn't... there was some patients, for instance, who did not use the pulse oximeter, and they could not understand... And many people didn't know how to read or how to write, and the caregiver had to do it.. and she wasn't always there... Or some caregivers said that they had enough burden to take care of their parents, and then having to weigh them every day, or answering a lot of questions... and it was complicated (...). Other patients know a lot about their illnesses and they want to be aware of everything, and when they put on the pulse oximeter and saw that they were at 88, when the day before they had been at 90... well, it generated anxiety... some patients even wake up at 4 in the morning to take the measures. [IP14\_1]*

Up to now, tele monitoring tools have been funded by national and international research projects as pilots so there are still not available to the whole population.

### 3.5.4 Hardware and mobile equipment

Physicians in charge of domiciliary attention, both in the ATDOM programme and the HDI programme, can access to the medical history of the patient and consult clinical trials through laptops or tablets they can use when visiting a patient at home. However, in practice the use of this equipment is reduced. Internet connection is low in some areas of Badalona and carrying the computer can be burdensome, especially when they have to move through steep streets, which are frequent in Badalona. Besides, physicians usually come from their office where they can consult all the documents. And anyway, the relation between domiciliary doctors and patients is usually a frequent one, and the physicians interviewed claim they already know "by heart" the history of the patient. The following assessment comes from a physician:

*We've got a laptop for the visits at home. The problem is that in this neighbourhood is slow, because of the antennas... so we decided that it was no point on going around with so much load (...) Sincerely, even though we have a laptop, we never take it because it is very heavy (...) and, after a while, you know the cases by heart, and you already know the patient. [IP07\_1]*

### 3.5.5 Further ICT applications

Most of the ICT applications used in BSA are directed to facilitate the care for the patient. Among these resources we may find the electronic prescription, the disposal of an advanced care plan (*pla anticipat de cures*) which is available through the clinical history of the patient, telecare and access to specialised equipment.

The electronic prescription (*recepta electronica*) has been recently implemented in Catalunya in order to facilitate prescription of medication and, at the same time, stimulate a rational use of drugs through conciliation of medication. In the case of chronic patients, the electronic prescription makes it easier to get their medication at the pharmacy, without having to go to the doctor to collect the prescription. Moreover, through the electronic prescription all the medication prescribed to a patient is sent to the physician, who should ensure that drugs are conciliated.

Recently a new plan has been drawn by the CatSalut to dispose, for all chronic patients, an advance care plan gathering all the information from the patient (personal data, medical history, drugs, etc.) but also a foresight of the interventions that should be carried out in case the patient cannot express his or her will. This care plan should be prepared with the patient and the family, and it is available from the clinical history of the patient. Around 90% of chronic patients with a CMN have this plan initiated though only a small part have all the information completed, being the part of the advanced will (*voluntats anticipades*) the most difficult to fulfil due to lack of time of the health professionals involved.

Telecare is, as it has been said above, one of the services more extended among CCP. It is highly valued because it guarantees a rapid response whenever is needed, and gives tranquillity to patients living at home, alone or with a caregiver. Though it's conceived as an emergency resource, Telecare is used for different needs (from an urgency to a question about which pills to take or a need to speak to someone). This service is highly valued, both for the quickness of the response when an emergency occurs and for the close treatment given by the professionals in charge, who telephone the users periodically to ensure the device is working correctly and, even, phone them to felicitate their birthday.

Generally the acceptance is high, and patients get easily used to the device. This has changed with time, and an evolution can be observed from the moment of its initial implementation, when there was more resistance to the use of telecare. However, nowadays it's a very popular service, which is widely known by the population, and easily accepted. In fact, as the professionals interviewed explained, most users that are in a first instance reluctant to get telecare eventually ask for it.

Nevertheless, there also some barriers to telecare which reduce its effectiveness. The first barrier is a technological one, since it only works at home and connected to a landline telephone. The foresight is that in the near future this technology will probably evolve, incorporating an internet connection and, even, a GPS localizer, so it can be used outside the place of residence. Co-payment can also be a barrier for the use of the telecare, though the cost for the patient is low and there are schemes to exempt

people that cannot pay for the service, and usually there is a high perception of benefit. A bigger problem is the use of the device. The patient has to carry the device on himself or herself during all day, but sometimes they forget it, or, even they take it off because they don't want to spoil it. Then, it is the duty of the family worker or the social worker to insist that they have to carry it on. This could be observed in the case of the patient visited for the case study, who had pulled out the device when she took a shower because she didn't want to damp it (though, as the social worker insisted, it is in the shower where most accidents occur). The following quote from an interview with a social worker also illustrates these barriers:

*Many are on their own, and this thing they carry is their “guardian angel”. Anything that happens, they press the bottom and someone will contact them immediately. Telecare is, for them, like having their sons or family around, or someone that is going to answer them quickly. But sometimes they forget it. When they go out in the street they take it off, and then they don't remember to put it again. Or they are afraid it breaks down when they go into the shower and they take it off, and is just one of the moments when the telecare is more needed, and it can go into the water... I always put them the same example: if they are in the shower and fell down, how will they ask for help?. [IP12\_1]*

### 3.6 Information and research/monitoring

#### 3.6.1 Results of evaluation

According to the documents analysed (*Study of Integrated Care in European Regions: Case Study of Badalona Serveis Assistencials*) BSA is currently carrying out an evaluation process trying to link its integrated care model to health outcomes and impact.

The preliminary results of the analysis reveal that there has been a reduction on the average length of stay, average amount of bed-days, as well as emergency visits. Furthermore, the clinical pathways developed have facilitated an improvement in the process outcomes, including compliance and adherence to the guidelines. All these impacts have improved the functional status and health outcomes of the patients as well as led to a reduction of the operating cost of clinical services.

The use of EHR has facilitated the coordination between the levels of care, an improvement in the organizational processes, as well as of the decision making process. All these measures have led to better quality of care with greater control and better results in the target population making BSA being more efficient.

#### 3.6.2 Perception of evaluation

The perception collected during the interviews is that evaluation is, mainly, an argument to maintain the new programmes, especially the ones related to domiciliary attention. Both the managers and the physicians leading the domiciliary attention programmes at BSA are eager to collect information about domiciliary attention since this is, in fact, a way to demonstrate the effectiveness of domiciliary attention. Managers use these data as an argument to negotiate the maintenance of the programmes with the regional administration. Physicians participate in researches and in international conferences



and have compared the results of patients attended at their homes to show that it is an effective measure to avoid hospitalizations and the use of the emergencies services, proving to be a cost-saving programme.

However, physicians working at the programmes have expressed less concern about these results, and are more interested in the quality of the attention or, even, the satisfaction of the patients, which are not so thoroughly fully evaluated. This quotation, from an interview with a physician, illustrates this concern.

*For me, reducing expenditure is not a priority, it's a priority for the Generalitat (catalan Government). Our aim, as physicians, should not be this (...) but you have to take it into account. Because you'll be evaluated for this, afterwards. [IP08\_1]*

### 3.7 Financing

Financing of the integrated care system comes from different sources.

As far as healthcare is concerned, the Catalan government (Generalitat de Catalunya) has developed an organizational model based on the historical evolution of the Catalan health system, which comprises a mix of private and public healthcare providers. The Catalan health system is a NHS-based system (Beveridge model) with purchaser - provider split. The Catalan Government finances the system and the Department of Health is responsible for Planning. The Catalan Health Services (CATSALUT) is in charge of the health plan and the portfolio of services. Based on population needs in each region, CATSALUT purchases healthcare services. The payment is based on activities performed, especially in the case of hospitals, and health objectives and population assigned, in the case of Primary Care.

On the other hand, social care services are responsibility of the Department of Social Welfare and Family. According to the Law (*Llei de Bases del Règim Local*), municipalities are responsible for the provision of social services.

Finally, there are no special national investments and funding programmes to ensure adequate resources for sustainable change, and the most innovative initiatives are funded by EC projects.

Within this context, the financing of the activities carried out by BSA varies depending on each level of service.

In primary care, the reimbursed method is based on the population covered adjusted according to age, gender, dispersion of the population in the territory, income level and capacity to attract patients from nearby areas. Specialist care (Hospital) is financed per service provided (mainly counted by hospital discharges but also consultations, emergency services or ambulatory surgery). The Socio Health Centre is also financed through this method (in this case, occupied beds). Specific projects, as HaH, have a particular financing system, and their activity is counted as an admission to Hospital. Finally, most of the budget for the provision of Social Services comes from Badalona local Council and a small part from the users through co-payment.

Sometimes this system allows to re-address resources from one programme to another, financing services in deficit through others that generate benefits. However, these variability of sources and



criteria hinder the management of Services, which are thought from an integrated perspective but financed from different budgets, and professionals working in one case are paid through different programmes and from different funding sources.

A manager from BSA explains how this system works:

*CATSALUD finances one part of the ATDOM programme, but the other part is not financed. Then, we have some parts of the programme that have funding but others, as the Hospital at Home, not. But we do it because it's our spirit, our way of doing things. Additionally, mixing all this with social services is something that is particular of BSA, and does not happen anywhere else. [IP11\_1]*

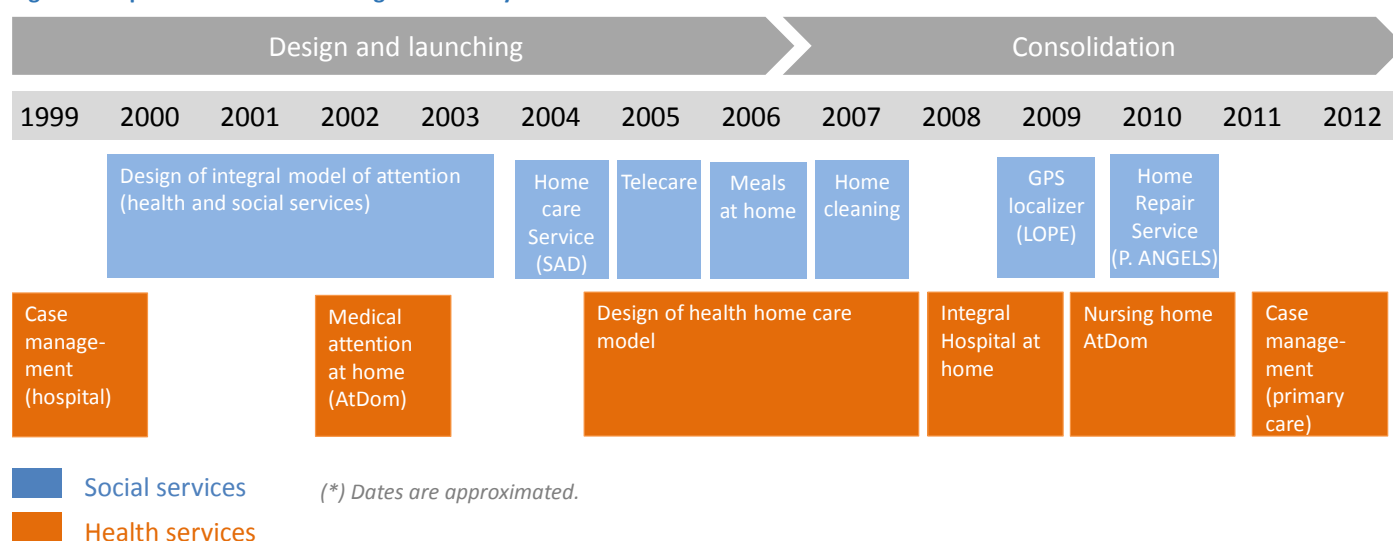
As stated during the interviews, this financing logic goes against the efficiency of the system. It's the case, for instance, of tele monitoring services or other programmes like the HaH or the NH AtDom. All these programmes have demonstrated their efficiency in terms of costs. They are not only cheaper than attending patients in a conventional Hospital floor (which is very expensive for the system) but they also reduce the use of emergency services and readmissions at the hospital due to exacerbations in the condition of the patient. However, as far as these programmes result in a decrease of hospitalizations, they detract resources from CATSALUD, since hospital visits are paid by the regular financing system but tele monitoring and other projects depend on ad hoc financing. This is described by one of the managers interviewed as “the perversion of the system”, because the financing system undermines precisely those programmes which have proven to be more efficient and cost saving programmes. This manager summarizes these considerations as follows:

*This is what we call “the perversion of the financing system”. Because the financing system is not adapted, and it does not foment efficiency. Because we should function with a capitation system (...). This would foster efficiency and competitiveness of the system, and would help the introduction of innovation and improving health outcomes. [IP11\_1]*

### 3.8 Implementation process

BSA model is the result of different initiatives towards integration of social and health systems that have been implemented progressively from 1999. The result of this process is an integrated care system, but the programme has not been designed intentionally from the beginning as it is today. From what the persons interviewed have recalled during the field work process, we can explain the history of BSA model in two main phases: from 2000 to 2006 (design and launching) and from 2006 to 2016 (consolidation).

Figure 6: Implementation of the integrated care system



Source: Author elaboration based in information provided by Badalona Serveis Assistencials

### 3.8.1 Design and launching of the integrated model (2000 – 2005)

The decision to create an integrated care system including social and healthcare services dates from 2000 when Badalona's City council transferred social care to BSA, a municipal enterprise that up to that moment was in charge of the health services in the city, namely the Hospital Municipal de Badalona and 6 primary care centres.

At that time, the political party governing Badalona city was the Socialist Catalan Party (PSC). The mayor of the city was also the president of Barcelona County Council and Badalona was a very active town in the impulse of large projects, especially those related to attention to the persons, being a reference for many other cities. At that time, fostering a model that put the person at the centre of city policies was a mainstream in city policies.

The decision was, therefore, a political one. A unique Council Department was created, bringing together Social Care and Healthcare Departments. As a result, the chart of Badalona city council is quite different to others in that social services and health services are hanging from the same Deputy Mayor. The interview with one of the managers of BSA indicates how the system works:

*We are now in a situation in which there is only one councillor. When we received the commission to run social services, the local council merged the two departments. Therefore, at local level there is a distinct fusion at a political level, which fosters the model at a strategic level, because the councillor of health is the same one dealing social services, and the vision on the patients' needs is complete.*  
[IP11\_1]

Another important motive that drove Badalona City Council towards the integration of services was the anticipation of a dramatic increase in the demand in social services. The approbation of the Social Services Law (*Llei de Serveis Socials*) and, later on, the Dependency Law (*Llei de la Dependència*) entailed higher demand for attention which could be difficult to satisfy from the Local Council rigid structures.

According to one of the interviewees, the existence of a municipal enterprise as BSA was then seen as an opportunity for a more agile and flexible management, and thus, Badalona City Council decided to entrust the management of all social services to BSA.

Other motives implied by the interviewees are related to the efficiency of the system. Apparently, before the integration the social services were not able to spend all the budget available, even though there were unmet needs among the population. This was another reason for the creation of a unique team to manage all the social services prescribed who could ensure a global vision of all the services provided in the city. The interview with one of the managers of BSA indicates how it went:

*One of the reasons we took the decision to externalise home care services was that the available budget was not spent, due to the way of working, the management of the system (...) I don't know, whatever. Budget was smaller than now then, but anyway one of the assignments we had was this: optimise all the resources we have. Because if we budget money for social services, we have to spend it. We can't say, we've saved money when we have a long waiting list. . This is not saving, this is not doing things well. And now, we manage to spend all the budget for social care services.*

BSA started a strategy towards integration of health services with the creation of the figure of CMN in 1999. However, the first step towards integration was the assignment of the portfolio of social services of Badalona City Council to BSA. The design of the new model lasted three years, during which a participative process was held involving all the stakeholders: the National Health Institute (*Institut Català de la Salut - ICS*), Badalona city council, Barcelona Province Council, social workers, etc. The result of this process was the approval of a framework Document For Domiciliary Care (*Document Marc d'Atenció Domiciliària*) where the main features of the system were described.

It was in 2004 that the Social Integrated Domiciliary System (*Servei d'Atenció Integral Domiciliària - SAID*) was launched. In the beginning the service managed the Telecare Service and the Home Care Service. In 2004, this amounted to a team of 60 family workers and around a hundred cases. These services were managed through a central unit and, differently to what happens in other cities, in Badalona these services can be prescribed both by social services (depending on the Department of Social Welfare) and health services (depending on the Department of Health). This way a first step towards integration was taken.

This process, however, was not an easy one. Even though the process involved the participation of different stakeholders, resistances of particular sectors from the organization could not be avoided. Social workers were not convinced with the change of the system, and resistances emerged (as described in chapter 4.1.3). The perception of social workers is that, with the centralisation of the provision of home care services, they have lost control over their cases. Besides, integration of social and health services could only be implemented in the centres run by BSA, while in the centres ruled by the ICS the separation between social and health services remains. Over the years, some of these resistances have been overcome, and the governance model helps to a closer relationship between managers in social and health services. However, at the professional level, some resistances still persist.

### 3.8.2 Consolidation of the model. The evolution towards domiciliary care (2006-2016)

The real integration takes place in 2006, when BSA launches the domiciliary care system. After a thorough bibliographic revision, a new model of domiciliary attention was drawn and the AtDom programme is complemented with other programmes to attend patients at their residence, as the NH AtDom and the HaH.

Simultaneously, new services were included in the portfolio of social services. These are all complementary services addressed to assist in homecare, so CCP can stay at their homes avoiding institutionalisation or hospitalisation. The actual portfolio of BSA comprises a wide range of services, from the Home Cleaning Services to the Meals at Home Service or a specific programme for patients leaving the hospital as the Integral Home Care Service, the GPS Localizer Service or the Home Repair Service.

These different services have been launched progressively, in order to satisfy needs that are identified during the process of care and, also, with a view to optimise costs. For instance, the Service Of Meals at Home was originated by the observation that many family workers were cooking for individual users. Instead of this, which of course had a high cost, a new service was organised through the Socio Health Service, which also belongs to BSA, preparing home meals for all these people and distributing them at their homes.

With the launching of all these services, a system of integral care has been gradually implemented through the Chronic Patient Programme which covers the continuum of care through the provision of social and healthcare services.

## 3.9 Discussion

### 3.9.1 General discussion of the programme

Badalona Serveis Assistencials (BSA) distinctive trait is that it is an integrated care organization, providing integrated services across the continuum of care, including social care. All levels of care (primary care, specialized care, social care and homecare services) are managed within the same organization.

This model is specific of BSA, which differs from the rest of the healthcare providers in Catalonia in that healthcare and social care services are managed from an integrated perspective. This model allows to put the patient at the centre of the process of care, dealing with the different types of needs derived from frail and chronic conditions.

The initial driver for integrations of services was policy commitment towards a patient-centric model, which enabled a continuum of care at a local level. This commitment has led to a reorganization of the provision of services addressed to promote cooperation between tiers of care and between health and social care, with the Case Management Nurse playing a pivotal role in all this process. On top of this, a governance mechanism where there is one councillor for health and social care allows that all the organization assumes the integration of the two services.

Since then, the need to increase efficiency and cost-effectiveness has pushed the organization towards integration and provision of new services addressed to the promotion of independent living among chronic patients, the education towards a proactive care and the reduction of the use of emergency services and of hospitalization.

Integration of services is especially important in the case of CCP for whom the provision of home care services help to avoid institutionalization and maintain their quality of life. The integration of services is also crucial for all the domiciliary health services. Social services are a necessary complement to healthcare services, and the integration is the key to allow chronic patients to stay at their home. This is important not only for the patient's quality of life but also for the efficiency of the system. The lack of an environment that covers basic needs is usually an underlying reason for which chronic patients are admitted to the hospital or use the emergency services. Providing social support has proven a valuable strategy to reduce the use of emergency services, which is also much more cost-effective.

BSA constitutes a particular model, in which health and social care programmes present specificities in the way programmes are applied and also in the creation of services that are unique for BSA.

The programme is composed of various medical services - Case Management Nurse (CMN) Medical Attention at Home (AtDom), the Integral Hospital at Home (HaH), the Nursing Homes Attention (NH AtDom)) and Palliative Attention (PADES) – which are accompanied by social care services – Telecare, cleaning services, meals at home, home care services, GPS localizer and home rehabilitation -.

Many of these services, as the Case Management Nurse, the Hospital at Home, or the home care services also exist in other places, but in BSA they have been adapted to the needs of the MAMCC model of care, and present several differences with regard to other systems.

Case Management exists in different Hospitals and primary centres run by the Catalan Institute of Health (ICS) but in BSA there is a limited number of patients per nurse, which give long term personalized attention and conduct a close monitoring of all their patients in coordination with all the professionals involved.

The domiciliary health services are also present in other territories. However BSA has strongly bet for home care attention which constitutes clearly a priority.

Medical attention at home, for instance, is conducted in many primary care centres, but the professionals in charge of this attention are the same doctors and nurses treating the patients in the consultation. Instead, BSA has opted to create a specialised team in charge of domiciliary attention, who is in charge of visiting all the patients at home. At the beginning this aroused some resistances, both from the primary care doctors (reluctant to lose contact with their patients) and from the patients. However, doctors in charge of visiting patients at home have been carefully selected and trained, and have been able to guarantee a very personalised attention, which has resulted in high satisfaction among the patients and primary care physicians have grown accustomed to the model.

Hospital at Home is also common in other cities in Catalonia, since home hospitalization has proven to be highly efficient both in economic terms and satisfaction of the patients. However, most of these services are addressed to acute patients. The service offered by BSA is different in that it is aimed exclusively to complex chronic patients and geriatric patients with rehabilitation needs, which, on the one hand, are the ones consuming more resources but on the other hand are also the ones that need a

more complex treatment. For this reason, in the Hospital at Home run by BSA is of crucial importance the selection of the cases that can be treated at home, and, unlike what happens in many other programmes, the existence of an able caregiver is a *sine qua non* condition. CCP have very demanding needs, and it is essential for the Programme to ensure that the patient is taken care properly and that the health cures plan is followed correctly.

BSA also provides several services that are not guaranteed in other cities, as the Nursing Homes Attention or many of the services included in the social services portfolio (like the meals at home programme or the home repair service). The Integral Home Care services for patients in the Hospital at Home is also a tailored service.

### 3.9.2 Discussion of the programme in the context of the conceptual framework

#### **Service delivery**

BSA constitutes an example of an integrated organization with all its elements aligned to achieve care coordination that fulfils the main characteristics of the chronic care model. The focus is on care of elderly patients with long-term conditions. The setting provides a continuum of services among different levels of care in its area of coverage, namely: home, social support, primary care, secondary care and convalescence hospital.

The patient is at the centre of the attention and the end result is a significant impact on reduction of hospitalizations, use of emergency room services and institutionalization. Full integration of social care and healthcare constitutes a specific characteristic that distinguishes BSA from all the rest of the healthcare providers in the region.

Specific traits of the setting are: i) Empowerment of patients and caregivers; ii) Case Management Nurse at the centre of the process to foster proactive management of the patient as well as coordination of the different professionals; and, iii) 24/7 care by a doctor on call, with access to the clinical history of the patient.

#### **Leadership and governance**

The characteristics of BSA as an integrated organization facilitate both governance and organizational change. It is of note that the organizational change has progressively generated a strong professional leadership highly involved in initiatives at EU level.

#### **Workforce**

The combination of the elements described in the two previous dimensions: delivery of care complying with the chronic care model and the fact that BSA is a truly integrated care organization with strong leadership of professionals has progressively generated the expected changes in the workforce. That is, a clear increase of collaborative work, as well as boosting educational and preventive activities.

Emergence of new roles (i.e., home-based attention physician and Case Management Nurse) have also been natural innovations.

### **Financing**

The BSA programme has generated significant efficiencies at healthcare sector level allowing sustainability despite poor level of coverage of the budget by external funding. The programme is suffering from poor alignment between its successful evolution and the lack of changes of the reimbursement model. The end result is that the initiative does not receive enough financial incentives. The current financial gap may compromise both sustainability and further evolutions of the programme.

### **Technologies and medical products**

Information and Communication Technologies (ICT) have played a key role supporting the novel services. The BSA programme has generated synergies between existing ICT infrastructure at regional and healthcare sector levels with innovative on site developments supported by different programmes. It shall be noted that tele monitoring programmes have been carried out only at pilot level.

### **Information and research**

The temporal evolution of key performance indicators (KPI) such that reduction of the average of length of stay, bed-days and emergency visits, improvement of the process outcomes, including compliance and adherence have been very positive. Moreover, the programme has generated a clear reduction of the operational cost of clinical services which provided sustainability of the setting. However, the BSA programme is missing a formal comparative analysis against a control area. Likely, the best control area is the Badalona area not covered by BSA, but by the Institute Catalan of Health (ICS). One of the goals during the life span of SELFIE is to develop such a formal comparison using the KPI agreed with the Catalan Quality for Health Agency (AQuAS).

### 3.10 Appendix I: List of persons interviewed

Interview number	partner	Stakeholder	Interview date
IP01_1		Coordinator of social work	25.05.2016
IP02_1		Third Sector Entities	25.05.2016
IP03_1		Medical Director	31.05.2016
IP04_1		Deputy Medical Director	31.05.2016
IP05_1		Geriatrician (Hospital at home care team)	31.05.2016
IP06_1		Healthcare Coordinator	02.06.2016
IP07_1		General Practitioner (Homecare team)	02.06.2016
IP08_1		Geriatrician (Residential care team)	02.06.2016
IP09_1		Nurse (Residential care team)	02.06.2016
IP10_1		Caregiver	02.06.2016
IP11_1		Innovation manager	03.06.2016
IP12_1		Nursing assistant	15.06.2016
IP13_1		User	15.06.2016
IP13_1		Caregiver	15.06.2016
IP14_1		Case Nurse	15.06.2016

### 3.11 Appendix II: List of quotations

*L'objectiu és intentar que la persona estigui a casa seva i evitar sempre que sigui possible òbviament l'ingrés a l'hospital, o al sociosanitari, o la institucionalització definitiva de la persona*

Our objective is that the person stays at home and avoid, when possible, admittance at the hospital, the socio-health centre or the final institutionalization of the patient.

[IP04\_1]

*Intentar que la gent s'adapti al sistema és molt difícil. Nosaltres ens hem d'adaptar i si hem de canviar figures de professionals, i si hem de canviar horaris de professionals, doncs canviem.*

Pretending that persons should adapt to the system is very difficult. It's us who have to adapt, and if we have to change professional profiles or schedules, we do it

[IP03\_1]



*Jo soc un gran defensor de l'atenció domiciliària sinó no m'hagués embarcat en tot això, però reconec que (...) aquest grup de pacients són pacients complexos que el que fas és transmetre la responsabilitat i la presa de decisions a un familiar i per tant, has d'intentar garantir-lis al màxim suport professional*

I'm a great defender of domiciliary attention, if not, I wouldn't have been involved in all this, but I acknowledge that these patients are complex patients, and what you are doing is transferring the responsibility and decision making to the family. Therefore, you have to guarantee them the as much professional support as possible

[IP04\_1]

*Són pacients que és diuen PCC que és Pacient Crònic Complex. És a dir, en una complexitat, i en una fragilitat és molt fàcil que puguin tenir noves crisis. Hi ha una reagudització freqüent, i per tant necessiten una persona que sigui molt proactivament, o intentant evitar, o si arriba aquesta descompensació que de seguida s'activi el recurs que és necessari. Clar, això són pacients que encara que no siguin un volum important, són els que més recursos precisen i consumeixen. Llavors, clar, s'ha de tenir una atenció més d'una persona especialitzada en aquest tipus de pacient.*

We call these patients CCP (Chronic Complex Patients) because they are complex and frail, and can easily experience new crisis. Exacerbations are usual and, therefore, they need proactive attention and acting quickly when a decompensation occurs. Even if this type of patients does not represent an important volume, they consume most of the resources, and it is important that they are attended by different professionals specialized in these type of patients.

[IP03\_1]

*El objetivo no solo es hacer un menor gasto sanitario sino que el paciente tome exactamente lo que necesita, sin descompensar sus enfermedades (...) y en prevenir-que yo creo que es lo más importante- los ingresos hospitalarios. (..) Si el paciente está bien evaluado, ya lo tienes detectado y conocido, sabes que tratamientos lleva y se te empieza a poner malo, si tienes la capacidad de actuar antes, previenes un ingreso hospitalario o una visita a urgencias.*

The objective is not just to reduce healthcare expenditure but giving the patients exactly what they need, avoiding decompensations (...) and preventing – which I think is the most important – hospitalization (...) If the patient is well evaluated, you know which treatments he has, and when he is ill you can act quick, preventing hospitalization or going to the emergency services.

[IP08\_1]

*S'aprofita el fet d'estar en l'entorn domiciliari per poder, d'alguna manera, anar una mica més enllà si s'ha identificat la causa de perquè s'ha descompensat un pacient. Hi ha molt component de prevenció que si es fa bé el pacient pot evitar que li torni a passar, o gestionar-ho. A més informació la família ja té més eines per poder detectar-ho... Per la part del sistema el que té és que minimitza de manera molt*

*radical el nombre d'estades hospitalàries i les redueix exclusivament a aquell moment en què la situació del pacient és massa inestable per a poder ser assumida al domicili*

You take advantage of being at home to be able, somehow, of going further. Prevention has an important role, and if it's well done, you can avoid that the patient has the same problem again, or you can manage it. The more information the family has, the more tools they have to detect... As far as the system is concerned, you reduce drastically the number of hospitalizations and you reduce them to the moment in which the patient's situation is too unstable to be dealt with at home.

[IP05\_1]

*El fet de poder accedir a preguntar-li al metge de guàrdia, sabent que el metge de guàrdia coneix la història clínica d'aquesta persona, els hi transmet moltíssima tranquil·litat. Per tant, evitem moltes anades i vingudes a urgències perquè moltes vegades, ja et dic, la consulta es pot resoldre de manera telefònica i estalviem molts viatges.... a veure, són persones que estan... complexes, dependents... i que no estan a una situació d'autonomia normal.*

Having access to a doctor in duty, and knowing that this doctor knows their clinical history provides great assurance to patients. With this service we avoid many visits to emergency services, because many times the problem can be solved by telephone.... I mean, these persons are... complex, dependent... and they are not in a normal situation, they are not autonomous. [IP04\_1]

*Aquests pacients crònics són pacients que tenen una cronicitat, els assistencials que han d'estar per coses agudes han d'estar per quan hi ha una crisi, i després hi ha altres professions. Aquest pacients s'han d'atendre més si necessiten unes cures, necessiten més educació, necessiten més atenció social, no necessiten tant del metge, tant de l'especialitat de família com del de l'hospital*

These patients are persons with a chronic condition, assistance must be available for acute situations and act when a crisis occurs, and afterwards there are other professionals involved. These patients need attention related to cures, education, social attention, they don't need the doctors so much.

[IP03\_1]

*Tenim una situació de salut aguda que en aquell moment necessita casi per concepte més suport de l'entorn cuidador de l'habitual. Llavors el SAT integrat és per nosaltres una oportunitat de poder facilitar l'ingrés domiciliari donant un suport puntual de dos setmanes en l'entorn cuidador que és el temps en que el malalt està més inestable. (...) Un cop està activat infermeria pot treballar tal qual treballem els cuidadors, puntualment en temes d'higiene o de maneig de la mobilitat, poden interaccionar amb ells o donar algunes pautes si detecten riscos, etc. És una interacció real que es treballa normalment amb treballadora familiar. I cada cas té un objectiu que es en base al pacient. I aquest és un dels punts aquí a BSA en que interaccionem més els nostres recursos amb els recursos socials.*

When we have an acute situation, it needs more support to the caregiver than usual. Then the Integral Home Care Service is an opportunity to activate the hospital at home, since it gives support during two

weeks to the caregiver, which is the period in which the patient is more unstable (...). When this service is activated, the nurses can work with the caregivers, focusing in hygienic issues, mobility, etc. and interact with them giving advice and detecting risks. It's a real interaction, and usually the family worker is also involved. And each case has a different objective, depending on the situation of the patient. This service is probably the one in which most interaction occurs between health services and social services.

[IP05\_1]

*Pensem que la primera visita és important fer-la al domicili perquè veus una mica quina és la situació social, l'entorn, si està disposat a fer de reforç a tot el que diem, si pren bé la medicació, que aquest és un tema important, perquè tu els portes a la consulta i et diuen "sí, sí yo me tomo esto, yo me tomo lo otro" però quan arribes a casa i obres aquell armari de les medicines allò és un desastre i te'n adones que hi ha moltes coses que no prenen o que no fan bé.*

We think first visit is very important and it must be done at home, because then you can see which is the social situation, the environment, if the patient is ready to follow our instructions, if he takes the medication... This is an important issue, because when you are at the consultation they say <yes, I take this, I take that> but when you go to their homes and open the medicines' cupboard it's a mess and you see that there are many things they don't take, o that they don't do it well.

[IP14\_01]

*Aleshores una mica fem l'educació sanitària del pacient pneumològic, que és els canvis de l'ESPUT, o la necessitat de 3 coixins al llit en lloc d'un, totes aquestes coses, petites coses del dia a dia que són molt tontes però que ells... I els cardiològics el que fem és que es pesin 3 cops a la setmana, un registre del pes i quan guanyen pes ens truquen de seguida. Els edemes, la pressió... Molts d'ells tenen el pulsioxímetre a casa, el compren ells, el tensiòmetre... I qualsevol cosa et truquen, o sigui que estan molt bé.*

We conduct health education of pneumologic patient, and explain them about the changes in the sputum, or the need to put three pillows instead of one... these things, small things of daily life that can be silly things but they appreciate... And with cardiolitics we tell them to weigh themselves three times a week, and register their weight, and when they gain weight they have to call us. Oedemas, blood pressure... Many of them have a pulsioximeter at home, they buy it, the blood pressure monitor... and they call you anytime they register a strange value.

[IP14\_01]

*Amb els pacients fem força (educació) i amb els cuidadors moltíssim. Perquè hi ha molts pacients que tenen demència i llavors el cuidador és principal sí, són molt poc autònoms (...) A més a més tanta medicació... El cuidador se sent bastant reforçat per el fet de que hi anem nosaltres, perquè clar hi ha un vincle entre cuidador pacient que en aquestes malalties cròniques, sobretot els pneumològics, són pacients que tenen un caràcter força especial, i a vegades el tema de fer cas a les famílies no funciona gaire bé, però als cuidadors els impliquem a les cures i en molts casos truca al cuidador. I ells ens truquen*

*a nosaltres. I ens pregunten coses sobre el tractament. Els cuidador són amb qui es troben més tranquils. (...) Estan molt contents. I el vincle amb els cuidadors és molt important.*

With patients we do a lot (of education) and even more with caregivers. Because many patients have dementia and the caregiver is very important, because they are not autonomous (...) Besides, with all this medication... The caregiver has to be reinforced with our visits, because there is a link between patient and caregiver that with those chronic illnesses, specially pneumology, they are patients with special character, and sometimes they don't listen to their families, but we try to involve caregivers in the cures, and many times it's the caregiver who phones. And they call us, and ask things about the cure. Caregivers are very comfortable and happy with us, and the tie with the caregiver is very important.

[IP14\_01]

*Llavors quan participa en un moment de crisi, el que vam detectar és que en el continu, molta de l'educació sanitari eu hem fet en aquell moment s'ha assumit i es manté en el temps. És una de les oportunitats del 'ingrés domiciliari, que quan hem de fer-ho en e oment de ciris es estressant i tot però després en el continu tenen una bona experiència d'aquell moment. Clar, després veus com aquesta educació ha perdurat en el temps. Que després ho gestionen els equips de primària però.. #0:53:6.4#*

When an exacerbation occurs, we have detected that in the continuum, most health education we have conducted before has been assumed. It's one of the opportunities of home care attention. When you have to do it in a moment of crisis is stressing, but after that, in the continuum, it's a good experience, and this education lasts over time. And after, primary care teams manage all this.

[IP05\_1]

*La infermera els hi ensenya perquè sinó hauríem d'anar cada dia a fer cures. La infermera habitual en aquest cas els hi ensenya a fer cures. Si es una cura diària no anirem cada dia. Nosaltres venim o un o màxim dos cops per setmana. I llavors intenta ensenyar-li per a què la cura vagi bé.*

Nurses teach the patients how to take care of themselves, because if not we would have to go every day to do the cures. In these cases, the nurse shows them how to do the cure, because if it's a daily cure we cannot go every day. We can visit the patient at home maximum two times a week, and the nurse teaches them so they can conduct a good cure.

[IP07\_1]

*Jo penso que conèixer al pacient i fer un reforç també pots ajudar a fer-li entendre en quina situació, en quin moment del procés i quina decisió ha de prendre. Ajudar-lo, perquè ell és el que ha de prendre la decisió. I una mica agafar las riendas de la seva malaltia i decidir fins a on vol arribar i què vol fer. (...) Doncs hem de treballar tots aquests aspectes perquè aconseguixi la màxima autonomia i pugui recuperar el millor estat de salut possible dintre de la seva condició. I poca cosa més.*

I think that you have to know the patient, and help them understand in which situation and in which moment of the process they are, and what decisions have to be taken. Help the, because they are the ones who have to take decisions. And somehow take the reins of their illness and decide where they want to get and what they want to do (...) We have to work all these aspects so they reach the maximum autonomy and can have the better health state as possible in their condition.

[IP14\_1]

*Des que vam començar això de gestió de cas amb domicili s'ha vist una reducció de les visites a urgències i dels pacients que consulten una reducció de les estades hospitalàries, perquè no arriben tan malament.*

From the moment we started with case management at home we've seen a reduction in the number of visits to emergency services, in the patients coming to the consultation, and also a reduction in the number of hospitalizations, because they don't arrive here in so bad conditions.

[IP14\_1]

*La gestió de cas és molt diferent a BSA per exemple de l'ICS, perquè a BSA nosaltres portem aquests 40 pacients i tu fas una intervenció molt continuada. Però per exemple l'ICS porta molts més pacients, gairebé el doble, i l'atenció es fa molt telefònicament. Van i programen la visita i truca el pacient perquè clar, tants pacients és impossible fer un seguiment... I em sembla que a més a més l'ICS es porten dos ambulatoris o sigui que imagina't. I la visió és diferent. La intervenció de gestió de cas, el pacient no es queda tant amb gestor de cas. És a dir, el pacient s'aguditza, fan una intervenció, reforcen un parell de dies o tres i li donen l'alta.*

Case management in BSA is different to that applied in the ICS (Catalan Institute of Health). In BSA we have 40 patients with a very intensive intervention. However, case nurses at the ICS attend more patients, even twice, and attention is mainly by telephone. They programme visits and call the patients, because with all these patients it is impossible to maintain a follow up... And I think that at the ICS each nurse attends two primary care centres... so you can imagine. And the vision is also different. The patient does not stay with the management nurse: when an exacerbation occurs the case nurse intervenes, and after two or three days he is discharged.

[IP14\_1]

*Hi ha entorns cuidadors que els hi costa molt entendre la intervenció per una banda i per l'altra els hi costa el canvi de l'educació. Estan acostumats a fer les coses d'una manera i quan tu dius "pues ara el mobilitzaràs d'aquesta manera", tenen dificultats reals de comprensió del pla de cures. no es tant voluntarietat sinó que els ho costa entendre-ho. Sobre tot durant els primers dies d'intervenció que són moltes pantes.*

Some caregivers have difficulties to understand the intervention on the one hand, and on the other hand there are resistances to change habits. They are used to do things in one way and when you say "now you'll move him this way" it is difficult for them to understand the cure plan. It's not that they are

not willing but that they have difficulties to understand. Especially during first days of the intervention, when they get much information.

[IP05\_1]

*Cuando es el marido, sobre todo cuando es el marido, es bastante duro para él. A los hombres les cuesta más desenvolverse en este tipo de faena. La mujer, no sé si es porque estamos más preparadas para cuidar, lo asume más. A la hora de la medicación, a la hora de las curas, a la hora de la higiene... Todo esto la mujer los asume mejor. El marido necesita que se ofrezca algún tipo de ayuda. Ellos pueden asumir por ejemplo una toma de medicación pero según que cosas les cuesta más. Para ellos es un trabajo añadido y te dicen que no están acostumbrados a eso... "He nacido para trabajar y no para cuidar" dicen.*

When it is the husband, especially when it is the husband, it can be hard for him. Men have more difficulties to do these type of tasks. Women, I don't know if it is because we are more prepared to take care, has a better predisposition. When it comes to medication, cures, hygiene... all these tasks are better assumed by women. Husbands usually need some kind of help. They can usually assume medication, but sometimes they also have difficulties. They see it as an additional work and they tell you that they are not used.. "I've been born to work, not to care", they say.

[IP12\_1]

*[El nivell sociocultural] és molt important. L'intentem minimitzar a base de més visites o simplificar les indicacions, o donar-les seqüenciades... Busques estratègies per que aquest factor no vagi en contra. Però si que és veritat que en depèn de quin entorn doncs potser requereixen més visites que un altre o l'evolució és més lenta.*

[Sociocultural level] is very important. We try to minimize it with more visits, or simplifying guidelines, giving them in sequence... We use strategies to mitigate this factor. But the truth is that, depending on the environment, you may require more visits or evolution is slower.

[IP05\_1]

*El Ayuntamiento decide incorporar como servicio complementario las reformas de la llar (...) Entonces apareció Roca i Pi, que habían tenido con el gremio de instaladores y el antiguo instituto de la construcción Gaudí, la idea de hacer algo parecido, y ellos tenían el dinero que ponía la fundación. Nosotros teníamos personal y teníamos casos y ellos tienen dinero, porque ellos tampoco tenían ni personal ni casos. Entonces nos ponemos de acuerdo y creamos el proyecto Àngels que sale también de la buena colaboración.*

The city council decides to incorporate home reforms as a complementary service (...). Then, Roca and Pi Foundation had the idea of doing something similar, together with the instalators guild and the Institute Gaudi, and they had the money to do it. We had the personnel and the users, and they had the money.

Then, we reached an agreement and we created the Angels project, which is the result of the cooperation between public and private sector.

[IP01\_1]

*El treballador social de primària és el que porta el cas i per tant és qui valora la necessitat de la prestació d'un servei dins de la cartera que tenen. Però ells no són qui gestionen el cas: deriven la proposta al SAID que és qui té la responsabilitat. Aquí també és queixen els treballadors socials de primària de que no tenen la capacitat de fer un seguiment del cas. És a dir, quan el cas li assignen un recurs, passa al SAID i aquí es provoca un certa pèrdua. Aquí hi ha un tema de dificultat, que el treballador social, que és qui fa l'acompanyament i el seguiment perd una mica la referència i el seguiment d'aquest cas.*

Social workers decide which services from the portfolio should be applied. But they don't manage the case, because the service is derived to the SAID (Home Care Management Centre), who is responsible of its activation and follow up. Social workers complain that they cannot do the follow up of the case. When a service is assigned it is transferred to the SAID and they kind of lose it. And this is a difficulty, because the social worker, who is the person in charge of the follow up of the user loses the reference of the service that has been applied.

[IP06\_1]

*Es fa molt difícil que una treballadora social de l'ajuntament pugui activar un recurs de salut (...) quan algú els hi va a demanar qualsevol prestació segur que tenen capacitat per detectar que hi ha algun problema de salut allà dins i que per tant podrien activar el recurs de salut i dir-li, vagi a veure el seu metge de família o fins i tot ells mateixos intentar programar una visita amb el metge de família o una cosa d'aquestes, o dir: escolta fes una valoració d'aquesta persona que he detectat el que sigui.*

It's difficult for a social worker from the local council to activate a health service (...). When someone asks them some service, they can surely detect if there is a health problem, and therefore they should be able to activate the resource, programming a visit with their family doctor or going to the doctor "please, make an assessment of this person, because I've detected..."

[IP04\_1]

*Qualsevol treballadora social de BSA, independentment d'on estigui, estigui a una àrea bàsica, estigui al sociosanitari, estigui a l'atenció domiciliària, estigui a l'atenció hospitalària, pot demanar un recurs social domiciliària, cosa que això és una particularitat perquè les treballadores socials de l'ICS no ho volen fer. No es que no ho puguin, sinó que es van negar a fer-ho. Aleshores les peticions del territori no BSA o territori ICS ens arriben a través dels serveis socials bàsics de l'Ajuntament.*

Any social worker from BSA, regardless of where they are – at a primary care centre, at the healthcare centre, at the domiciliary attention teams or at the hospital - can prescribe a social resource. This is particular of BSA, because the social workers from the ICS don't want to do it. It's not that they can't, it's



that they don't want to do it. Therefore, petitions of services from non BSA territory have to come through the local council social services.

[IP04\_1]

*Bueno, és que la manera de treballar dels metges ha canviat, ha canviat, o sigui, el metge lo té molt clar és que abans ens educaven, o ens formaven en les universitats per curar, i ara curem poc. (...) Nosaltres aliviem, estem tenint moltes malalties que abans mataven, ara ja no maten. Un procés oncològic per exemple, ja tenen un altre tipus de supervivència i el que estem és cronicant una persona que té una malaltia pues que potser no la mataria però la tindrà allà durant molts anys. O per exemple un cas claríssim es el VIH el VIH era una malaltia que al principi doncs era nefasta, ara amb els tractaments aquests pacients es mantenen crònics, però en aquesta cronicitat, què van tenint? Pues van tenint problemes de la banda social, van tenint problemes, al igual tenen una diabetis, qui m'educarà d'aquesta diabetis, el metge? No, la infermera. I en aquest moment el seu control de la diabetis es molt més important que la malaltia, que és prendre's una medicació, no? Després resulta que arribarà un moment que no podré treballar, no? I necessitaré d'un assessorament a nivell social, doncs en aquest moment tindrà més importància el treballador social, però cadascú ha de tenir clar que el seu protagonisme està on està. Pues el metge està en el diagnòstic i en la prescripció terapèutica, però després en el devanir de tot el procés tindran més importància altres professionals. Això no és més que res un treball de complementarietat, i esperar que el metge hagi de fer, o abastar tot això és impossible.*

The way doctors work has changed. Before, we were educated at the universities to heal, and now we heal little (...) We relieve. Many illnesses that used to be fatal, now don't. An oncologic process, for instance, has a different survival patterns, and what we are doing is making chronic a patient that has an illness that won't kill him but will be there during many years. Or VIH, that use to be a terrible disease and with new treatments those patients are chronic. But this chronicity requires different situations. They have social problems, they may have a diabetes and have to be educated, .. and who will do it? The doctor? No, the nurse. And at this time controlling diabetes is much more important than the illness. And then, there will be a moment he won't be able to work anymore. And at this moment he will need counselling, and the social worker will be more important than the doctor or the nurse. Everyone has a different leadership. The leadership of the doctor will be in the diagnosis and prescription, but after that other professionals will have a more important role. This is a work of complementarities, and pretending that the doctor covers everything is impossible.

[IP03\_1]

*Dins la professió d'infermera també una de les parts importants és la educació la informació i la prevenció. En aquestes figures jo crec que s'ha donat molta més importància en aquesta tasca de la infermeria, que estava com una mica amagada: abans únicament el que eren tècniques, administració de fàrmacs, i neteges i, ara la part més d'educació, de formació, de prevenció se les ha ponderat molt més a infermeria*

In the nursing profession one of the most important parts is education, information and prevention. In these figures I think that we have given more importance to this tasks, which were somehow hidden –



Before, it was only techniques, drugs administration, cleaning... now, education, training and prevention have been given more importance.

[IP03\_1]

*És un canvi de paradigma d'atenció. Jo com a especialista veig que si els serveis mèdics som capaços de poder fer totes les intervencions que fem a plantes en l'entorn del pacient és un canvi de model que requereix sobretot jo penso, de definir els recursos. No és que sigui complementari o secundari, simplement és un recurs més que s'ha de definir un pressupost, un staff específic i el seus protocols. Tenim molt la visió hospitalària de llits, passes de guàrdia etc. i es canvia una mica a la del procés: agafar el procés, els seus punts claus i mirant com podem adaptar-lo a cada un dels punts d'atenció compartida amb el pacient i el seu entorn. És una visió de canviar la manera de fer les coses*

It's a new paradigm. As an specialist I see that if medical services are able to do all the interventions we carry out at the hospital in the patient's environment, it is a new model that requires, mainly, a new definition of resources. It's not complementary or secondary, it's a new resource and a budget has to be defined, a specific staff and new protocols. We have a hospitalarian vision of beds, guards, etc. and we should change to a process framework: we should take the process and it's key issues and see how we could adapt it to each of the phases of shared attention with the patient and its environment. It's a vision that changes the way we are doing things.

[IP05\_1]

*Cal tenir molt clar quins són els punts essencials del procés i fins a quin punt pots assumir un risc professional que és molt elevat treballant fora del teu entorn clàssic d'una planta. Una de les coses de les que hem d'estar segurs és que quan marxem d'aquella visita, el bàsic de l'atenció aquell pacient i aquell entorn cuidador ho han assumit, perquè fins a al següent visita els qui s'encarreguen de l'atenció són ells. Els hi estem demanant unes tasques que clàssicament les hem realitzat professionals de la salut en un entorn diferent. No només movem la intervenció sinó que estem donat la confiança d'aquest procés en un entorn cuidador que es heterogeni i no professional. Llavors calen unes habilitats molt fortes dels professionals de saber els punts claus de l'atenció i transmetre les claus d'atenció transmetre l'essència perquè aquell procés vagi bé.*

You have to know the essential points of the process and know to what extent you can assume a professional risk, which is higher when you are working out of the classic environment of the hospital. One of the things we must be confident is that, when we leave that visit, patient and caregiver have understand the basic points of attention, because until next visit they will be responsible of the attention. We ask them to carry out tasks that up to now have been done by health professionals, in a different environment. We don't only move the intervention, we are giving the responsibility of the process to a caregiver environment that is heterogeneous and non-professional. Thus, you'll need strong abilities among professionals, who have to be able to know the essential points of the attention and to explain them to the caregiver.

[IP05\_1]

*Me'n recordo que a principi pensava: em moriré. Quan vaig començar, que a més va ser idea meva, que ningú volia fer-ho, vaig pensar que seria interessant, un canvi. Però al principi creia que no me'n sortiria. Clar, són més de 100 pacients! Jo només tenia 14 domicilis meus, la resta eren de tots. I pensava: no me'n surto d'això!*

I remember that, at the beginning I used to think: I'm goanna die. When I started it was my idea, because no one wanted to do it, and I thought a change would be interesting. But at the beginning I thought I wouldn't make it. It's 100 patients, and only 14 were from my previous patients. And I thought, I won't be able to do it.

[IP07\_1]

*Hi ha un doble pols: el pols mèdic de fer bé el procés o no , i de si va malament puc assumir'-ho o no, i per altra banda el pols amb la família de ho estan fent bé o no i si està anant malament perquè no estan complint*

There is a double challenge: the medical challenge of following the process correctly and that, if it doesn't go well I can assume it, and the challenge with the family, if they are doing it all right, or if it's going badly because they are not doing correctly their tasks.

[IP05\_1]

*La gestora de cas també fa una funció força complicada perquè fa una mica de metge. No és el concepte, però clar, tu vas a un domicili, valores el pacient, prens decisions... Jo per exemple si arribo a un domicili i veig a un pacient malament truco a la doctora i li dic com veig al pacient, li dono la meva opinió i ella em diu que tiri endavant. Clar, això des de primària era impensable. Que una infermera anés a un domicili i... I encara parlant amb els companys em diuen que ells no podrien. Infermers que estan a primària. "Esto de llegar y poner un urbason...". Bueno, doncs nosaltres això ho fem. Vas allà i veus que té les cames fatal i li poses un Segurín. Truques a la doctora, i tens un vincle amb la doctora, que et coneix i sap que saps el que et fas. Clar, això abans no es feia. És molt autònom. Jo vaig a un domicili i puc fer una analítica en qualsevol moment.*

The case management nurse has a complicated role, acting sometimes as a physician. It's not the concept, but, when you go to a house and evaluate the patient, you have to make decisions. In my case, for instance, when I see a patient and identify any complication I phone the doctor and explain her what I've found, I give her my opinion and, she tells me to go on. This, at primary care, would be impossible. Some colleagues still don't understand it, and they say they couldn't "Going there and dispense Urbason.... "Well, this is what we do. You get there, you see that the patient's legs are bad and you put a Segurin. Then you call the doctor.... And you have a nice bond with her, because she knows you and she knows what you are doing. This was not the way of doing things before. You have to be autonomous.. I'm going to a house and I'm able to conduct an analysis at any moment.

[IP14\_1]

*És bo però una mica l'equip de primària també es descarreguen del pacient i com ho portem controlat doncs es perden una mica. Aleshores jo penso que és bo que quan aquell pacient si s'aconsegueix que estigui més estable i que durat l'últim any no hagi fet aguditzacions que torni al seu equip de primària, perquè també l'equip de primària ha de ser capaç de tractar una agudització respiratòria lleu.*

It's ok, but somehow the primary care team gives up the patient, and since we control it, they kind of get lost. Then, I think that it's good that, when that patient is stable, and has not exacerbated during last year, goes back to the primary care team, because they should also be able to treat respiratory problems when they are mild.

[IP14\_1]

*I el metge de capçalera posa un tractament perquè ell creu que aquell tractament li anirà bé, però després ve l'especialista i diu que allò ja no existeix, o que aquell tractament no és el correcte... Aleshores l'especialista ho canvia i tu has d'anar a parlar amb el metge de capçalera i dir-li que ha de canviar la recepta quan vingui el pacient perquè la medicació que li va posar li han retirat per tal i tal, i clar, això crea conflicte.*

The primary care doctor gives a treatment, thinking it's ok, but then the specialist says that that treatment is not used anymore, or that it is not correct... Then the specialist changes the treatment, and you have to go and speak with the primary care doctor and tell him to change the prescription because the one he put was not ok, and, of course, this creates a conflict.

[IP14\_1]

*A salut tenim la sort de la immediatesa en les decisions i serveis socials no té aquesta sort. Vull dir, nosaltres si que es veritat que hi ha llistes d'espera quirúrgiques i aquestes coses, però quan algú es vol anar a visitar al metge hi va, i s'ha acabat la historia, i potser s'haurà d'esperar 2 dies, 3 dies si va normal, però si vol anar d'urgències té 80 hospitals a Catalunya per anar-se a visitar al servei d'urgències que vulgui. Això serveis socials no es exactament igual. Òbviament l'accés de salut ha sigut universal i gratuït i serveis socials ara es universal però no es gratuït. Hi ha copagament. Vull dir que son particularitats que s'han de tenir en compte i s'han de valorar abans d'intentar fer coses revolucionàries si li vols dir. I per tant s'ha de ser molt curós amb la intervenció que fem amb les treballadores socials.*

When dealing with health decisions have to be immediate, while at social services it's not like this. I mean that, for us, there should be waiting lists and so on, but when a patient needs to visit the doctor, he goes, and that's the end of the story, and maybe he will have to wait 2 or 3 days but if it's an emergency he can choose between 80 hospitals in Catalunya. In Social Services things are not like this. Access to health services have been universal and free, while social services are universal, but not necessarily free, because users have to pay a part of the services. I mean, these are specificities you have to take into account and you have to know them before trying to do revolutionary things... It's important to be very careful in the interventions with social workers.

[IP04\_1]

*Un altre problema que tenim és el tema dels programes informàtics, que és horrorós. Mira, a l'hospital treballen amb un programa informàtic que es du GESDOC. A primària treballen amb un altre programa informàtic que es diu ECAP i a la clínica del Carme, que és atenció sociosanitària treballen amb un altre programa informàtic, o sigui tu imagina't. Et venen els metges que no troben la informació del pacient, el que ha dit l'especialista, i et demanen que ho trobis i ho busques. I hi ha molts programes i es complica molt per a nosaltres, perquè hem de fer el vincle entre tot. I després dintre de l'ECAP està tota la informació especialitzada de Can Ruti que també ho hem de mirar, perquè hi ha molts pacients que van a l'especialista de Can Ruti o de l'Esperit Sant...*

Another problem we have is related to software, which is dreadful. Look, at the hospital they work with a software called GESDOC. Primary care centres have another programme called ECAP and at "El Carme" (the Socio-Health centre) they use another programme. So, you can imagine. Doctors come around and say they don't find the information from the specialist, and ask you to look for it. There are many programmes, and it is complicated for us, because we are the link among all of them. And still, at the ECAP you may find all the information from Can Ruti (the hospital from ICS operating at the area of Badalona), and we also have to look at it, because many patients go there...

[IP14\_1]

*Estem treballant amb una població vulnerable, fràgil en general, amb la qual cosa quants menys viatges li facis fer i menys finestretes li facis visitar i menys papers li facis recollir... o que els papers aquests hagin de ser duplicats perquè en aquesta finestra haig de donar algo però a l'altra finestra també, doncs em sembla un avenç sobretot per la població*

We are working with a vulnerable population, frail in general, and it is important for them to avoid going from one place to another and visiting different service providers and collecting different papers... or duplicate papers because you have to present this paper here and this same paper over there... I think this is an important progress for the population

[IP04\_1]

*Fins fa no molt teníem un programa informàtic que es posava al domicili del pacient un pulsòmetre, un tensiòmetre, una bàscula i es feien preguntes sobre l'estat de salut dels pacients. (...) I això ho van fer durant 3 mesos o així. Va estar bé. Arribaves al matí, encenies l'ordinador, entraves a l'aplicació i veies de cada pacient totes les dades. I veies per exemple (...) la pressió, si pujava la pressió estaves pendent... El problema és, en el meu cas, que la zona de Badalona on jo estic el nivell cultural de la població és una mica justet, i clar, no acabava de... I clar, hi havia algú que per exemple no es posava bé el pulsi, i no hi havia manera d'entendre... I clar, molta gent no sabia llegir ni escriure i aleshores era la cuidadora la que feia... I no hi era sempre... O algun cuidador et deia que tenia bastanta feina en cuidar al meu pare o... i a més a més cada dia haig de pesar-lo, comprovar l'oxigen i a més a més contestant aquestes preguntes... I era força complicat. (...) I pensa que els pacients coneixen la seva malaltia força bé, i volen estar pendents de tot, però clar, es posaven el pulsi i veien que estaven a 88 i pensaven que era dolent perquè el dia anterior estaven a 90 i clar... generava ansietat a segons quins pacients... Hi havia gent que s'aixecava les 4 del matí i ho feien.*

We had an programme and we put a pulsometer, a tensiometer and a weighing machine and several questions were made to monitor the state of the patients (...) and we did this during three months more or less. It worked well. When you got to your office in the morning, you put on your computer, went into the application and saw all the data of your patients. And you saw, for instance (...) if blood pressure was high, and then you could be more aware... The problem was, in my case, that in the part of Badalona where I am the cultural level of the population is low, and they didn't.... there was some patients, for instance, who did not use the pulsometer, and they could not understand... And many people didn't know how to read or how to write, and the caregiver had to do it.. and she wasn't always there... Or some caregivers said that they had enough burden to take care of their parents, and then having to weigh them every day, or answering a lot of questions... and it was complicated (....). Other patients know a lot about their illnesses and they want to be aware of everything, and when they put on the pulsometer and saw that they were at 88, when the day before they had been at 90... well, it generated anxiety... some patients even wake up at 4 in the morning to take the measures.

[IP14\_1]

*Tenim un ordinador portàtil per portar-lo als domicilis. El que passa és que en aquest barri va una mica lent perquè hi ha unes antenes.. llavors vam decidir que no anàvem carregats (...) Sincerament, per molt que tinguem l'ordinador portàtil, no el portem perquè anem carregats com a burros. (...) . però és que arriba un punt que ets saps els casos de memòria i coneixent el pacient*

We've got a laptop for the visits at home. The problem is that in this neighbourhood is slow, because of the antennas... so we decided that it was no point on going around with so much load (...) Sincerely, even though we have a laptop, we never take it because it is very heavy (...) and, after a while, you know the cases by heart, and you already know the patient

[IP07\_1]

*Muchos de ellos están solos y este botoncito que llevan colgado es "su ángel de la guarda". Cualquier cosa pican el botón y alguien les preguntará al instante que cómo están. La tele asistencia para ellos es tener a un hijo cerca, o a un familiar cerca o alguien que saben que les va a contestar en seguida. Sí que es verdad que se lo olvidan. Cuando salen a la calle se lo quitan y luego no se acuerdan de ponérselo. O para que no se estropee cuando se van a duchar se lo quitan, que precisamente es uno de los momentos donde es más necesario, y se puede mojar... Y yo siempre les pongo el ejemplo de que si están en la ducha y se resbalan y caen ¿cómo piden ayuda?*

Many are on their own, and this thing they carry is their "guardian angel". Anything that happens, they press the bottom and someone will contact them immediately. Telecare is, for them, like having their sons or family around, or someone that is going to answer them quickly. But sometimes they forget it. When they go out in the street they take it off, and then they don't remember to put it again. Or they are afraid it breaks down when they go into the shower and they take it off, and is just one of the moments when the telecare is more needed, and it can go into the water... I always put them the same example: if they are in the shower and fell down, how will they ask for help?

[IP12\_1]

*Para mí reducir el gasto no es una prioridad, lo es para la Generalitat. Nuestro objetivo como sanitarios no tiene que ser este el principal (...) pero hay que tenerlo en cuenta. Porque luego te van a evaluar eso también.*

For me, reducing expenditure is not a priority, it's a priority for the Generalitat (catalan Government). Our aim, as physicians, should not be this (...) but you have to take it into account. Because you'll be evaluated for this, afterwards.

[IP08\_1]

*El CatSalut financia aquesta part [programa AT-DOM], però l'altra part no ve finançada realment per a res, llavors per la part de prestació, clínica o mèdica a domicili tenim algunes parts que estan finançades com ara el programa abdom però en canvi hi ha altres programes que fem com l'hospital a domicili que no estan finançades, i que ho fem perquè nosaltres pensem que és el tarannà o la manera de fer del BCA, a més, el fet de barrejar-ho amb la prestació social és una cosa que és pròpia nostra, i que no passa en cap altra organització del sistema català.*

CATSALUD finances one part of the ATDOM programme, but the other part is not financed. Then, we have some parts of the programme that have funding but others, as the Hospital at Home, not. But we do it because it's our spirit, our way of doing things. Additionally, mixing all this with social services is something that is particular of BSA, and does not happen anywhere else.

[IP11\_1]

*Això és el que nosaltres anomenem la perversió del sistema de finançament. És a dir que el sistema de finançament no està adaptat i no és suficientment bo per a fomentar l'eficiència. No funcionem amb un sistema capitiatiu, (...). Això és una cosa que a nosaltres ens fomentaria l'eficiència i la competitivitat del sistema, realment per a introduir innovacions i ser capaços de millorar els resultats de salut de la població.*

This is what we call "the perversion of the financing system". Because the financing system is not adapted, and it does not foment efficiency. Because we should function with a capitation system (...). This would foster efficiency and competitiveness of the system, and would help the introduction of innovation and improving health outcomes.

[IP11\_1]

*Hem arribat en una situació en la que hi ha una sola regidoria. O sigui quan nosaltres vam rebre l'encàrrec de gestió per part de l'ajuntament de manejar els serveis socials (...) l'ajuntament es va fusionar amb dues regidories. Per tant a nivell local i la banda política hi ha una fusió inequívoca a nivell polític que per tant fomenta a nivell estratègic que això sigui així amb dues coses, és a dir el nostre*

*regidor de salut és el mateix a qui li parles de prestació socials, llavors la visió de les necessitats del pacient és completa.*

We are now in a situation in which there is only one councillor. When we received the commission to run social services, the local council merged the two departments. Therefore, at local level there is a distinct fusion at a political level, which fosters the model at a strategic level, because the councillor of health is the same one dealing social services, and the vision on the patients' needs is complete.

[IP11\_1]

### 3.12 Appendix III Abbreviations used

AtDom	Medical Attention at Home
BSA	Badalona Healthcare Services
CCP	Complex Chronic Patients
CMN	Case Management Nurse
HaH	Hospital at Home
MAMCC	Care Model for Patients with Complex Chronic Conditions
NH AtDom	Nursing Homes Attention
SAD	Home Care Service
SAID	Integral Home Care Attention Service

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## 4 Area Integral de Salut, Barcelona-Esquerra (Ais-Be): basic information

### 4.1 Basic information

#### 4.1.1 Basic information about the programme

##### *Name of the programme*

This report contains information gathered through document analysis and fieldwork consisting in in-depth interviews with different stakeholders involved in the **Implementation of Community-based Collaborative Management of Complex Chronic Patients** at Ais-Be (Area Integral de Salut, Barcelona Esquerra)

##### *Contact details of project management*

Xavier Altimiras (xaltimiras@catsalut.cat) – Manager Integrated Care Area “Barcelona-Esquerra” (Ais-Be). Barcelona Health Consortium (CatSalut). Standing Committee of Ais-Be.

Joan Escarrabill (ESCARRABILL@clinic.cat) – Chronic Care Programme Manager at Hospital Clinic. Standing Committee of Ais-Be, are the persons responsible of the management of the programme, and can be contacted for further references.

##### *Starting date*

The formulation of the programme was done in the year 2000 as a research and innovation initiative. The initial clinical pilots generated evidence on efficacy of the services (Home Hospitalization and Early Discharge, Prevention of Hospitalizations, etc...) through different randomized controlled trials (RCT) designs. These initial experiences had an important impact in the Hospital Clínic and its reference area, leading to the creation of a dedicated facility, the Integrated Care Unit (2006) to provide transversal care services and to explore and exploit potential benefits of bridging hospital-based specialized care and community care with support of information and communication technologies (ICT). In parallel, a wider strategy for coordination and integration in the health district, known as “Barcelona Esquerra” (Ais-Be, Area Integral de Salut, Barcelona Esquerra) was initiated also in 2006 by the Health Consortium of Barcelona.

During the period 2006 – 2014, two major milestones have been achieved. Firstly, maturity of the Ais-Be programme aiming at bridging between highly specialized care and community-based services. It includes several mainstream services, namely: (i) Support of primary care teams by specialists; (ii) AIDS-HIV; (iii) Teledermatology; (iv) Home hospitalization, etc... A second achievement has been the generation of an ecosystem of several ICT-supported integrated care initiatives with different degrees of maturity evolving toward mainstream services.

The main driver of the Ais-BE programme is the need for generating efficient specialized care through transference of care complexities from hospital to community-based services conducted with appropriate support of specialized professionals. Consequently, the Ais-BE programme is highly oriented toward vertical integration across different levels of care, also considering integration of social support. The entire programme is fully aligned with the Catalan Health Plans supporting integrated care. Moreover, the Ais Be programme uses a systems medicine approach for adoption of integrated care aiming at paving the way for deployment of personalized medicine for chronic patients.

Since early 2015, the Ais-BE programme is looking for convergence between mainstream services and the ecosystem of innovation alluded to above. Such a convergence has been formulated through the NEXTCARE (Innovation in Integrated Care Services for Chronic Patients), a RIS3 (Research and Innovation Strategies for Smart Specializations) initiative (2016-2020). NEXTCARE addresses five actions that encompass the main challenges encountered during the deployment of integrated care. Action 1 deals with Health Risk Assessment and Stratification. Action 2 aims at promoting healthy lifestyles with focus on physical activity. Action 3 deploys community-based management of complex chronic patients (CCP). Action 4 deals with regional deployment of transfer of diagnostic testing to primary care focusing on forced spirometry as a use case. Finally, Action 5 promotes interoperability between healthcare, informal care and biomedical research conforming the so-called Digital Health Framework, as a technological facilitator that support collaborative adaptive case management (ACM).

It is of note that the activity of SELFIE in Ais-BE will be focused on Action 3 of NEXTECARE. That is, community-based management of complex chronic patients (CCP)

### *Geographical scope*

Healthcare in Barcelona is provided in the framework of a public health system based on the model of the National Health Service (universal cover, financed from taxation and free at the point of use). The organization is structured in four integrated health areas, one of which is the **Integrated Health Area of Barcelona Esquerra** (*Àrea Integral de Salut de Barcelona Esquerra – Ais-Be*), the territory referred to in this case study. **The population covered by Ais-Be is of about 524,000 inhabitants**, representing 35% of the population of Barcelona City and 7% of Catalonia. Table 3 describes the characteristics of the population. Interestingly, ageing was found to be above average for the population of Catalonia as a whole: 22% of people older than 65 yrs., compared to 17.3% of people older than 65 yrs. in Catalonia.

Table 3: Population of Area Integral de Salut de Barcelona Esquerra (Ais-Be).

	Age Groups	Population		Age Groups	Population		Age Groups	Population	% Groups
MEN	0-14	33,021	WOMEN	0-14	31,173	TOTAL	0-14	64,194	13%
	15-64	167,682		15-64	179,058		15-64	346,740	65%
	≥65	45,129		≥65	68,332		≥65	113,461	22%
	TOTAL	245,832		TOTAL	278,563		TOTAL	524,395	

Source RCA 2014

AGEING INDEX	2011	2012	2013	2014
AIS BARCELONA ESQUERRA	1.694	1.708	1.739	1.767

**Ageing index:** ratio of population aged 65 years or more and population aged 0 to 14 years

Source: Font, D et al 2016 Integrated Health Care Barcelona Esquerra (Ais-Be): A Global View of Organisational Development, Re-Engineering of Processes and Improvement of the Information Systems. The Role of the Tertiary University Hospital in the Transformation. International Journal of Integrated Care, 16(2): 8, pp. 1–10, DOI: <http://dx.doi.org/10.5334/ijic.2476>

### Target group and number of persons treated

The target group for Community-based Collaborative Management of Complex Chronic Patients (CCP) comprises cases with at least one of the following three factors defining complexity:

- Need for highly specialized services directly delivered into the community
- Need for coordination among specialists and across healthcare tiers & at home
- Management of frailty due to functional impairment and/or risk of social exclusion.

The CCP programme assessed in SELFIE will consider two services

- Community-based management of CCP with high risk of hospitalization: a) transitional care after hospital Discharge; and, b) long term community-based management
- Integrated care for patients under LTOT.

Patients included will be initially recruited from the current Home Hospitalization and Early Discharge (HH/ED) service and the Long-term oxygen therapy (LTOT) service, respectively. However, a core action in these two studies is to foster convergence with the different ICT-supported clinical services currently existing in the ecosystem of the Hospital Clinic.

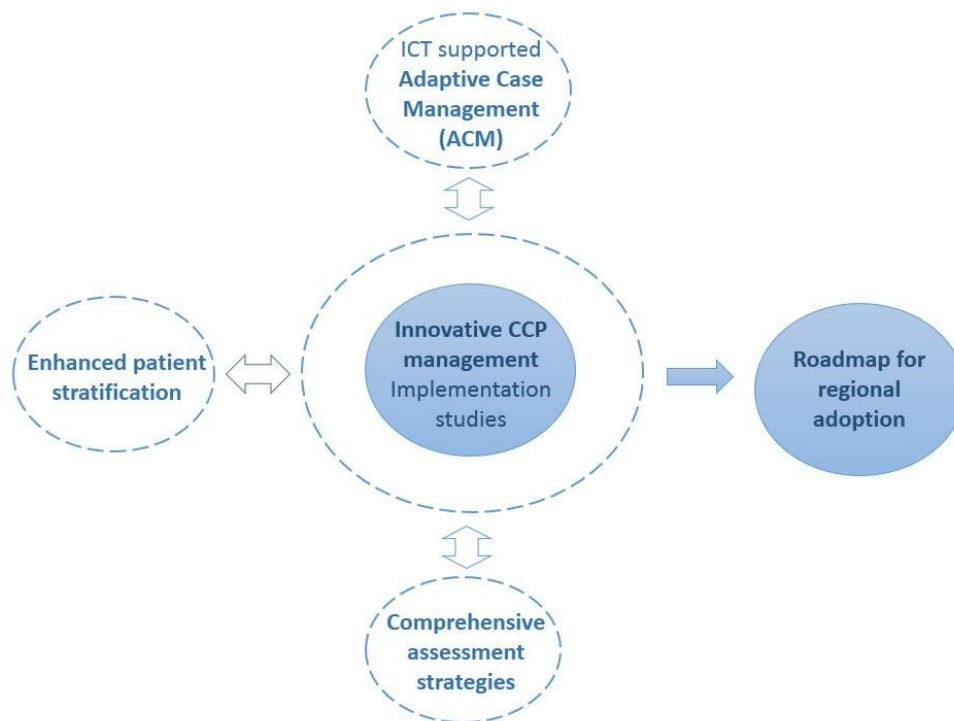
The entire set of active programmes encompasses a large number of patients (> 10,000 cases). However, the two studies described constraints the assessment of outcomes performing a Multiple-criteria decision analysis (MCDA) to **3,000 cases**.

### *Aim of the programme*

The Community-based management of CCP with high risk of hospitalization addresses the five pivotal aims displayed in Figure 7.

Firstly, **implementation of two integrated care interventions** using a collaborative and adaptive case management (ACM) approach: i) Community-based management of CCP; and, ii) Integrated care for patients under long-term oxygen therapy (LTOT). The second aim is **adoption of information and communication technologies** (ICT) required to support collaborative ACM. Thirdly, the programme evaluates the **impact of enhanced clinical health risk assessment and stratification**. The fourth aim is **assessment of healthcare value generation** of the services both during the deployment phase and after regional scale-up of the novel services. Finally, the implementation in Ais-Be will **generate a roadmap for regional adoption** of the CCP programme.

Figure 7: Five pivotal aims to achieve successful regional adoption of the community-based programme for collaborative management of complex chronic patients (CCP) across health-care tiers.



Source: Cano I et al. (submitted 2016). Protocol for Regional Implementation of Community-based Collaborative Management of Complex Chronic Patients. NPJ Primary Care Respiratory Medicine.

### *Ownership*

The programme is legally owned by Hospital Clinic. It will be supervised by CatSalut that will participate in the governance through the standing committee of Ais-Be.

The ICT aspects of the programme are being refined under the umbrella of Barcelona Virtual Health Practice (BCN-VPN), a strategic alliance between Hospital Clinic and EURECAT (eurecat.org) that is running the regional project NextCare (RIS3CAT).

All historical integrated programmes at Hospital Clinic are converging under the umbrella of NextCare during the period 2016-2020 with a building-blocks approach. The ultimate aim is that by the year 2020 all the above mentioned programmes, including the two implementation services analysed in depth in SELFIE, must be mainstream services.

### *Involved partner organisations*

The two key partner organizations are Hospital Clinic (healthcare provider) and Catsalut (regional public payer). Other partner organizations, healthcare providers, are: Hospital Sagrat Cor, Hospital Plato, Institut Català de la Salut (ICS) and CAPSE (see IJIC-David Font). Moreover, a supporting network of partner organizations participating in NextCare (see document NextCare) should be considered.

### *Involved disciplines and professions*

The entire programme looks for the convergence between large scale implementation of ICT-supported new models of care (wherein integrated care is one of the core components), with real deployment of systems medicine approaches. Consequently, cross-fertilization between research and innovation is backbone in the development of the programme. Moreover, the educational component involving innovation on professional training to prepare the workforce for the new model of care is also an important activity closely coordinated with healthcare and research plans by the University of Barcelona, Hospital Clínic and the IDIBAPS research institute ([www.idibaps.org](http://www.idibaps.org)).

### *Definitions*

#### **Definition of integrated care** (as defined in Hernandez, 2014, & Hernandez, 2015)

An Integrated Care Service (ICS) is defined as a set of well-standardized tasks to be carried out both for and by the patient on the basis of his/her health condition and social circumstances, with the aim of achieving target objectives aligned with the comprehensive treatment plan adopted. Two characteristics which distinguish ICS from conventional care are the patient-centred approach and the longitudinal nature of the interventions, the length of which depends on the type of ICS.

#### **Definition of Multi-morbidity** (as defined in Cano et al, 2016)

Poor comparability among experiences on management of multi-morbidity emerges as an important hurdle for adoption of integrated care. In this regard, the lack of an operational definition for complex chronic patients (CCP) is not a negligible factor. Moreover, the lack of an appropriate service workflow design precludes both evaluation and comparability of reported experiences.

The term CCP is usually applied to subjects with heterogeneous conditions that may depict at least one of the following three traits: i) need for management by several specialists from different disciplines

generating high use of healthcare resources; ii) frailty, requiring additional support either due to functional decline, social deficits and/or transient situations like post- hospital discharge; or, iii) need for highly specialized care with home-based technological support. Moreover, CCP often show a dynamic evolution over time in terms of both health risk and care requirements, such that their management requires a balance between structured (predefined and repeatable) and unstructured processes (depending on evolving circumstances and ad-hoc decisions).

**Definition of person centeredness** (as defined in Hernandez et al, IJIC 2015)

Person centeredness refers to three main characteristics of the integrated care services as deployed in Ais-Be: i) case-oriented (in contrast with classical disease-oriented approaches); ii) healthcare system with enhanced patient accessibility to services; iii) empowerment of patients for self-management promoting their active role in the management of their conditions; and, iv) types of services and professionals involved

**Definition of self-management** (as defined in Cano et al, 2016)

Self-management support is the empowerment of patients with chronic conditions that enables them to manage their conditions day to day. In order to support patient self-management, the two target use cases described by Cano (Cano et al, 2016) require the personal health folder already deployed in the region (Saigó F, et. al. *Personal health records: the case of the Personal Health Folder of Catalonia (Spain)*. *Gac Sanit*. 2012 Nov-Dec;26(6):582-4.).

#### 4.1.2 Overview of the information used for analysis

The following documents have been analysed:

- Alonso A, Sampietro-Colom L. (2014) Project INTEGRATE. Final Case Report for COPD ([www.projectintegrate.eu](http://www.projectintegrate.eu))
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**Field work** has been conducted between May and June 2016 and 11 persons have been interviewed (see Annex I).

## 4.2 Service delivery

### 4.2.1 Design of delivery of care

#### *The Integrated Health Area “Barcelona Esquerra”*

The fragmentation of healthcare, centred more on episodes than on processes, and the difficulties of co-ordination that this focus generates, are one of the causes that affect the quality of care.

In 2006, a series of projects were launched in order to improve the coordination between different providers and care levels in Barcelona. As a result, the city of Barcelona was structured in four health areas (Àrees Integrals de Salut – Ais) - one of which is the area known as the Àrea Integral de Salut Esquerra de l'Eixample (Ais-Be) - whose mission is offering an integral attention of health to the population, through the effective coordination of the different organizations providing health services and their professionals (*Consorci Sanitari de Barcelona, Organització de les àrees de salut*).

According to the documents describing this organizational development (*Font, 2016*) the main goals of the project is the integration of care pathways at all levels, not just in the integration of physicians to the hospital but between all professionals involved in the process of care, to blur the boundaries between hospital and primary care and to improve population health-related outcomes.

All the AIS have a similar organizational structure, and are composed by different organs: the CAIS (Comitè Àrea Integral de Salut), Steering Committee, Technical Office and Operational Committees (see section 3). The key element in the organisation are the Operational Committees (OC) composed by professionals of different profiles (specialized physicians, general medicine, community nurses and advanced nurses), organisations (primary care, hospitals, providers, etc.) and levels of care. Each OC develops different projects, according to the priorities defined in the Catalan Health Plan and prioritised by the management structures of the Ais-Be or of needs identified by professionals themselves. There are more than 40 work groups that involve more than 400 medical and nursing professionals. Improving palliative care, intervention on poorly controlled diabetes patients, care for patients with allergic conditions, and renal diseases are examples of this type of intervention. In some other cases, the work focuses on the reorganisation of the entire care process with the development of guidelines for joint clinical practice or for the homogenisation of clinical practice (derivation processes, protocols, pharmaco-therapeutic tracks, research and training activities, etc.)

A good example of this structural reorganization can be seen in the delivery of Urgent Care. This change has resulted in a new organisation of emergency care towards a better integration and coordination between the different providers in the esquerra example. Its goal, as described in the documentation (*Font, 2016*) was to reorganise the healthcare devices and resources available for emergency care of the



population aged >18 years in the Ais-Be, evolving from a highly centralised model in the A&E Service of the Hospital Clínic de Barcelona to a network care model adjusting the activity of each facility depending on the complexity, so as to free up A&E at the Hospital Clínic thereby improving waiting times.

The evaluation of the results of Ais-Be extracted from the interviews (IP09\_2) is very positive. After 10 years of functioning different tools, protocols and contents have been generated based in the consensus and participation of the same professionals involved in their application. Moreover, the activities conducted in the frame of Ais-Be (group work by the OC, training activities, clinical groups, etc.) have resulted in a tight relationship among professionals from different organizations and profiles, and has generated interesting projects and synergies among them. Finally, all this has had a positive impact in the attention to the patients, who receive a more integrated care and benefit from a better coordination among professionals of different organizations and levels of care. As one of the representatives of the payer organizations puts it:

*Professionals see interest in this, and this is an improvement. Professionals that did not speak between the, who did not know each other... Knowing each other is important, because when they have to work together it's easier, and if you have seen my face and I have seen yours, and if one day I solve you one problem, then this face smiles, and the other way round, and it's easier to speak about things. This is what we've achieved. [IP09\_2]*

The key factors beyond Ais-Be are the alignment of the management teams and especially, the involvement of professionals with a bottom-up vision, with collaborative work of professionals from different profiles and organization as the basic elements of the model. As one of the persons interviewed pointed out, the strategy beyond Ais-Be is the creation of an “ecosystem” which promotes joint work among professionals and puts the basis for collaboration and cooperation in the territory.

Other elements underlying the model and pointed out during the interviews (IP09\_2) are: i) experience of joint work after 10 years, ii) utility, through the development of contents that are useful to solve day to day problems and respond to the interests of the professionals composing the groups, iii) consensus in the organization of work and the decision of the contents to be elaborated.

### *The protocol for large scale deployment of integrated care for CCP*

In the context of Ais-Be, the protocol for large scale deployment of integrated care for CCP constitutes a step forward towards integration of care for chronic care patients. This is a last step in a process of integration of care for complex patients, which was initiated in 2000 (*see section 8. Implementation process*).

Large scale adoption of integrated care for chronic patients constitutes a key milestone to accelerate adaptation of current healthcare systems to the evolving needs triggered by population ageing and high prevalence of chronic conditions. According to the documentation describing the protocol (Cano et al, 2016) the central hypothesis of the complex chronic patients (CCP) programme is that adoption of well-structured service workflows with a collaborative and adaptive case management (ACM) approach, together with enhanced clinical risk assessment, should overcome current limitations for efficient management of multi-morbidity.



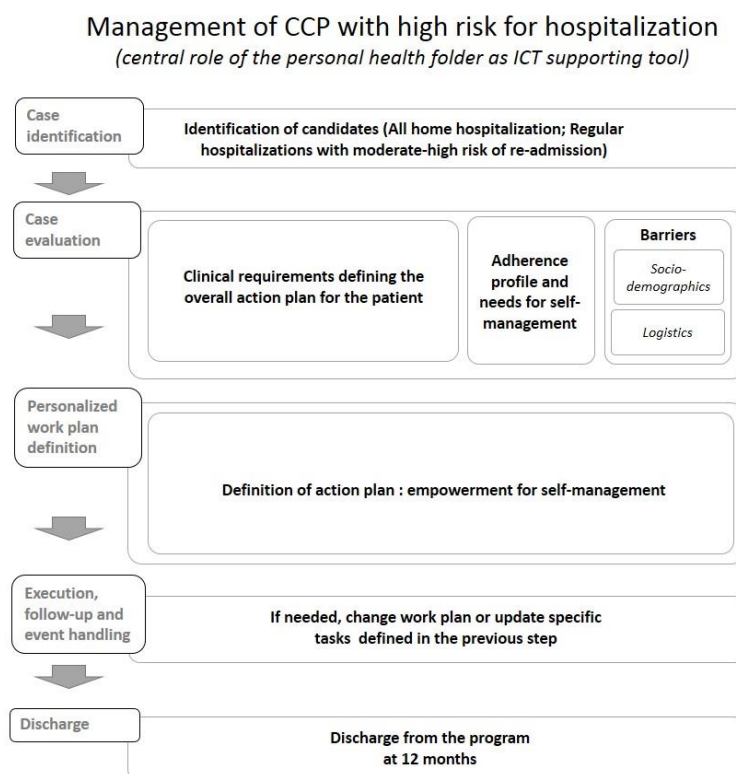
The Protocol for Regional Implementation of Community-based Collaborative Management of Complex Chronic Patients is composed of two programmes selected as representative of CCP: i) Community-based management of CCP (transitional care (short term 3m) and long term follow-up (12m) ; and, ii) Integrated care for patients under LTOT.

The implementation of structured but flexible service workflows are used in the **both services** for the management of multi-morbidity to enable an efficient collaboration between specialized care and community based services.

### Service delivery for CCP

The structure of the general service workflow of the collaborative management of CCP is displayed in Figure 8, which depicts the service through five sequential steps.

**Figure 8: Management of CCP with high risk for hospitalization**



Source: Cano I et al. (submitted 2016). Protocol for Regional Implementation of Community-based Collaborative Management of Complex Chronic Patients. NPJ Primary Care Respiratory Medicine. Community-based management of CCP with high risk of hospitalization: a) transitional care after hospital Discharge; and, b) long term community-based management .

Case identification. According to the description of the protocol, candidates to participate in the programme are selected among hospitalized patients showing moderate to high risk of early-hospital related event assessed using the GMA, further developed in chapter 6 (the threshold for study inclusion is be equivalent to a LACE index  $\geq 7$ )<sup>4</sup>. Additional inclusion criteria to be fulfilled by candidates are: i) living in the healthcare sector.; ii) being able to perform daily life activities and to follow a programme empowering patient self-care.

During the selection process special emphasis is given to the existence of an able caregiver. For a CCP with high risk of hospitalization the role of the reference person is especially relevant and this fact is emphasized both by the professionals and the patients participating in the field work.

Case evaluation. Immediately after the patient enters the programme, an initial characterization is carried out.

A holistic characterization is performed covering a threefold aim: i) Patient assessment; ii) Pharmacological and non-pharmacological treatment; ii) Identification of adherence profile and needs for self-management; and, iii) Assessment of barriers that may limit fulfilment of the program; and; iv) Identification of short and long-term clinical requirements; This evaluation covers as well a comprehensive assessment of the patient at entry in any face including severity of the primary disease, evaluation of co-morbid conditions and analysis of social support needs.

Case evaluation is critical both to ensure the appropriateness of the patient to the programme, for the drawing of the work plan and types of professionals involved. It is also noted the importance that this evaluation is coordinate by hospital and primary care team. The following quotes with one of the managers of the programme illustrates this idea:

*Chronic patient has to be evaluated in a different way, and we look at the 5 domains of WHO, from social issues to sociodemographic, co-morbidity, adherence to treatment, dependency, quality of life, accidentality, depression... then, we look at the resources they have (...) Bad perception of quality of life, anxiety, depression, the number of co-morbidities, the machines he has at home, the cures needed... and being a widower... this is the most complex of patients. [IP01\_2]*

*This type of patient has many machines at home, very complex, and they need the intervention of many specialists: cardiologists, pneumologist, and many others. (...) If they have more than 5 specialists, things are going to be difficult. If they take more than 6 drugs, there's a risk of low adherence. If the patient says "I don't know who my doctor is", then we have a risk. [IP01\_2]*

Personalized work plan definition. Based on the initial evaluation a personalized action plan is drawn and the intervention is conducted following the needs and special features of each patient. As the persons interviewed explain, this plan is highly personalized and varies depending on the needs and traits of each patient.

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<sup>4</sup> The LACE index is an accepted predictor of risk for early hospital readmission and/or mortality. It is composed of four variables: i) L, length of stay; ii) A, acuity of admission; iii) co-morbidities (Charlson index); and, iv) E, emergency department visits during the last six months

A special feature of integrated care is that interventions are planned and conducted from a holistic approach. As it is pointed out in the literature (Alonso, Sampietro-Colom, 2014), the objectives of integrated care of CCP are mostly, but not solely, related to the health status of the patient and many times there is a combination between health, education and social aims. Additionally, in the case of chronic patients more than one condition is present, and treatments are not specific of a single disease. Therefore, integrated care is designed to be effective in addressing a mix of conditions, and, though they are necessarily inspired by clinical guidelines, they deal with more than one condition at the same time, requiring the coordination between different specialists. A holistic approach is needed in the drawing of the working plans, and a close coordination is required with the different professionals and levels of care treating that patient. As one of the physicians explains:

*There's a very nice word: being holistic, and instead of treating illnesses treating patients (...) If a patient comes because of a pneumonia and then he has an anaemia, then we study the anaemia.*  
[IP04\_2]

Interviewees stress the importance of this in order to give confidence to the patients (IP02-2, IP04\_2). A two-hour educational programme is administered by a nurse and accompanied by patient specific support material. This educational programme covers knowledge of primary disease and co-morbidities, instructions on non-pharmacological treatment, administration techniques for proper pharmacological therapy, and techniques for self-management of the disease and comorbid conditions including strategies to adopt with future exacerbations.

In selected cases one joint visit of the advanced-practice nurse and the primary care team is performed at the patient home within 72 hours after entry into the programme. During this visit, the therapeutic plan for each patient is customized to their individual frailty factors and shared with the primary care team. Reinforcement of the logistics for treatment of comorbidities and social support are done accordingly.

Along the intervention, the visits are conducted following the working plan. Control visits include revision of the treatment, revision of drug administration, evaluation and detection of new needs. Basic education is also performed, depending on the needs of each patient (cures, medication, and habits) and reinforcing the contents of the first educational programme. Those educational programmes are personalized and adapted to the needs of each patient. This is a special trait of this programme, since the duration of these visits is much longer than in conventional settings, and allows a more in-depth and personalized transfer of knowledge about the patient's illnesses and their care.

Patients participating in the programme (Home Hospitalization and Early Discharge, HH/ED) also stress the importance of this education, in which the patient gets a deeper understanding of its own illness and the caregiver participates in all the process of attention and achieves confidence in the way of treating the patient. In this sense, it is noticeable the comment of one of the caregivers participating in the programme (IP06\_2), who pointed out how when attended at the hospital she was asked to get out of the room during the cure process while in the programme for home hospitalization she was actively involved in all the process. This involvement was highly appreciated, not only for the support and guidelines given by the care team but also for the confidence and empowerment that this participation implies

If there is an exacerbation in the condition of the patient, ad-hoc visits are programmed and the professionals involved (advanced-practice nurse, general physician, specialists, emergency services) are mobilized depending on the needs of the patient.

The number of home care visits, as well as access to specialized care, during the follow-up 12 month period is individually tailored, and dynamically adapted, to patient needs. Moreover, planned visits by specialized professionals can be scheduled through the day hospital or home visits if this was deemed necessary by primary care teams.

At any moment, the patients have a 24/7 emergency telephone at their disposal, attended by a call centre with access to all the information and personal folder of the patient. The call centre is attended on a rotation basis by the personnel from the Hospital Clinic, who have access to the personal health folder of the patient and, if needed, can contact directly to the specialists treating the patient or activate emergency services. The call centre covers 24/7 emergency telephone 365 days/year from 8:00 to 21:00; from 21:00 to 8:00 there is an answering machine for general issues and a doctor on call for each speciality. This service is especially appreciated among patients, and it is mentioned as a strong point of the programme during the two interviews with patients, who feel they have access to a quick and personalised response whenever they need it. This quote from the interview with a caregiver reflects the importance of the call centre:

*Now I don't get anxious if he gets worst, because I have an answer very quickly. I call the Clínica and, if it's necessary, we go the emergency services (....) From last year, being in the programme is reassuring for him and for me. [IP03\_2]*

The care of patients is implemented by a multidisciplinary team of advanced-practice nurses, physiotherapists, community nurses and social workers having a general practitioner as a reference. The advance nurse from the hospital give support to the primary care team.

Discharge. At the end of the programme duration, the patient can be discharged and entered into a maintenance programme. Eventually, it can be moved to other types of integrated care services. For the entire service delivery, it is essential that during all the processes described above collaboration between specialized care and primary care is a crucial item. This relation is guided by the reform of specialized care in the healthcare sectors initiated in 2006. The aim is that primary care teams are able to take charge once the patient has been stabilized.

A multidisciplinary team is created comprising an inpatient hospital team and a community-based care team to ensure a safe transition and support to the Primary Care team for long term follow-up. On the other hand, the advanced-practice nurses perform regular training sessions to the community-based care teams. However, during the interviews this aspect emerges as a conflicting one, due to time pressure and shortage of resources at primary care centres both in terms of time and human resources, and to the lack of competence to treat complex conditions.

### *Service delivery for LTOT*

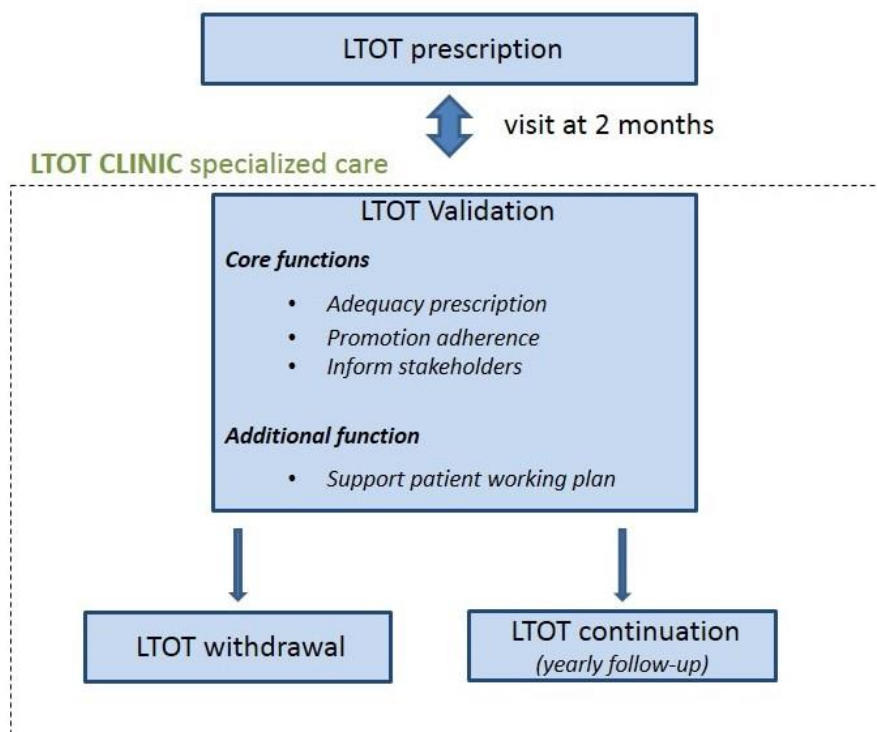
In the case of **patients under Long-term Oxygen Therapy (LTOT) (Hernandez C, Respir Med)** a recent report exploring the characteristics and healthcare needs of these patients in AISBE (n ~ 500 patients), two categories of unmet needs were identified, namely: i) limitations of LTOT; and, ii) problems

associated with patient management. In the first category, suboptimal LTOT prescription and poor LTOT adherence were identified as the two target problems to be improved in this patient group. In the second category: high degree of care fragmentation, sedentary life style and frailty were identified as problems to be solved. The study results prompted the hypothesis that integrated care management may contribute to address care limitations observed in these patients.

Within this scenario, two different areas of intervention should be highlighted:

**LTOT Clinic** – As described in detail in Hernandez C (Respiratory Medicine, 2015), the service is run by an advanced-practice nurse under the supervision of a respiratory physician. All clinically stable patients in whom LTOT has been prescribed are initially evaluated in the LTOT Clinic for the following three purposes: i) assess adequacy of LTOT prescription; ii) empowerment on LTOT adherence; and, iii) patient assessment; iv) check for fulfilment of the integrated care action plan. Moreover, patients in whom adequacy of LTOT prescription has been validated perform once a year visit to the LTOT Clinic to reinforce empowerment for self-managemen. The characteristics of the LTOT Clinic are summarized in Figure 9. The advanced-practice nurse has also a major role training primary-care teams and being the contact point with non-respiratory specialists regarding problems associated with LTOT.

Figure 9: LTOT Clinic flowchart



Source: Cano I et al. (submitted 2016). Protocol for Regional Implementation of Community-based Collaborative Management of Complex Chronic Patients. NPJ Primary Care Respiratory Medicine.

Summarizing the Protocol for large scale deployment of integrated care for CCP which includes the services commented above (Community-based management of CCP and the Integrated care for patients under LTOT), the existence of a set of well-standardised tasks together with an adaptive case management is the main traits in the treatment of CCP. An approach which enables flexibility in the process execution depending on the health state of the patient and, therefore, needs to be adopted dynamically by medical doctors and nurses. Key operational traits of the setting are:

- i. Formulation of a personalized working plan, with well-defined tasks, constitutes a central element for patient management.
- ii. The working plan for each patient includes both pharmacological and non-pharmacological interventions, as well as empowerment for healthy lifestyles. It also encompasses other aspects such as coverage of social and/or logistic support, if needed.
- iii. Both formulation and follow-up of the working plan are shared by specialized and primary care professionals. Their relative weight on working plan definition depends on patient complexity and specific needs.
- iv. The relative role of specialized versus primary care on formulation/follow up of the working plan can dynamically change according the evolution of the patient.
- v. All healthcare tiers should have accessibility to the patient working plan for collaborative purposes.
- vi. Specialized advanced practice nurses have a major role assisting primary care teams in the work plan execution and follow-up and also play an educational role and provide guidance. In practice, they are responsible of bridging specialized and primary care.
- vii. The primary care physician plays two central roles: as the main entry point into the healthcare system and as the reference professional for coordination purposes.
- viii. The ICT tools enable the organizational setting by providing functionalities adapted to the specificities of each site.

#### 4.2.2 Self-management interventions

Patient empowerment for developing an active role in the prevention and management of their diseases is a crucial aspect of the chronic care model. Moreover, the promotion of healthy lifestyles generates efficiencies at health system level. There is enough evidence proving that the role of the patient is crucial for the improvement of the care for chronic diseases in terms of healthy eating habits, maintaining physical activity or respecting directions given by the health professional in relation to medication intakes.

The Hospital Clínic and Primary Care teams have accomplished, over the years, multiple interventions addressed to empower and promote self-management among patients, from which the following initiatives should be highlighted: the experience of forumclinic and the experience of the Integrated Care Unit educational programmes. In the near future it is also expected the creation of a self-management tool to be developed through the project NextCare that will play a major role in CCP.

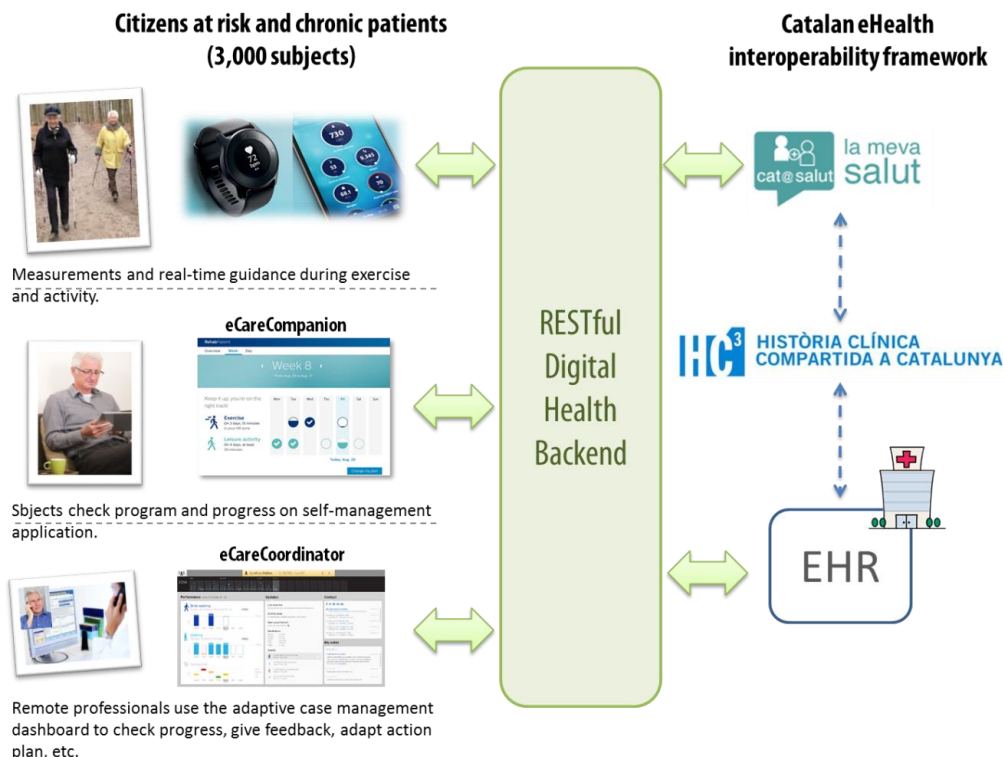
As an evolution of the Personal Health Folder, Nextcare will develop products and services for the promotion of physical activity for citizens at risk and for chronic patients (Figure 10), with the principal

hypothesis that the design of flexible and modular services, based on self-management and with ICT support, can generate a positive impact in health, this facilitating large scale adoption and sustainability

The summary description of the NextCare project points out the following objectives:

- Development of ICT tools to promote patient empowerment for self-management of his/her condition/s while encouraging changes in life styles with focus on the promotion of physical activity.
- Design and deployment of modular and flexible services for the promotion of physical activity based on self-management. The developed ICT tools will be key for supporting the proper articulation of the community-based physical activity programme with the healthcare system.
- Evaluation of the deployment of novel physical activity services supported with ICT.
- International dissemination and implementation of innovative business models that stimulate the deployment and provide sustainability.

Figure 10: Diagram of the Self-Management Tool



Source: NEXTCARE. 2016 Catalonia Reference Site. Personalized care of chronic patients in a digital health framework.



## 4.3 Leadership and governance

### 4.3.1 Organization and governance of the healthcare area of “Barcelona Esquerra”

At the integrated healthcare area of “Barcelona Esquerra” (Ais-Be) a wide range of health service suppliers can be found: public and private, primary care, specialized care and social healthcare, as shown in Table 4 below.

Table 4: Main healthcare suppliers in the integrated healthcare area of Barcelona Esquerra (Ais-Be).

Primary Care
<ul style="list-style-type: none"> <li>• Institut Català de la Salut: 13 teams</li> <li>• CAPSE: 3 teams</li> <li>• EAP Poble Sec: 1 team</li> <li>• EAP Sarrià-Vallplasa: 2 teams</li> </ul>
Specialty Care
<ul style="list-style-type: none"> <li>• Hospital Clínic</li> <li>• Hospital Plató</li> <li>• Hospital Sant Joan de Déu</li> <li>• Hospital Sagrat Cor</li> </ul>
Mental Health and Addictions
<ul style="list-style-type: none"> <li>• Hospital Clínic</li> <li>• Hospital Sant Joan de Déu SSM</li> <li>• Hospital Sant Pere Claver</li> <li>• Associació Centre Higiene Mental Les Corts</li> <li>• Agència Salut Pública de Barcelona</li> </ul>
Social Health Care
<ul style="list-style-type: none"> <li>• Parc Sanitari Pere Virgili</li> <li>• Centre BlauClínic</li> <li>• Clínica Sant Antoni de Barcelona</li> <li>• Fundació Sociosanitària Barcelona</li> </ul>
<ul style="list-style-type: none"> <li>• 33 Community Pharmacies</li> <li>• 4 Rehabilitation Centres</li> <li>• Emergency Services (<i>Servei d'Emergències Mèdiques de Catalunya – SEM</i>)</li> </ul>

Source: FONT D. Et al (2016). Integrated Health Care Barcelona Esquerra (Ais-Be): A Global View of Organisational Development, Re-Engineering of Processes and Improvement of the Information Systems. The Role of the Tertiary University Hospital in the Transformation. *International Journal of Integrated Care*. 2016;16(2):8.

Before 2006 all these suppliers worked in isolation, and the creation of Ais-Be was aimed at the integration and coordination of all the services and professionals working in the area. Thus, an organisational development and re-engineering process were defined around the integration of care pathways and the fostering of the relationship between the different suppliers and their professionals.



The resulting model is closer to a professional network than a hierarchical organisation. As described in the documentation (Font, 2016) Ais-Be has no legal existence, no single management, and no model of financing for the territory, tools that are in theory more robust for developing integrated care; a feature that was remarked during the interviews (IP09\_2). Results obtained by Ais-Be have been reached, therefore, with tools like clinical management, strategic planning and analysis of patient-centred processes, which have facilitated to break down barriers between entities and levels of care. The following quote from an interview with a representative of the payer organizations illustrates this idea:

*Those are virtual structures, and you don't have a legal frame, nor a budget, and they are somehow like network structures, virtual, with a very nice philosophy... and instead that every user goes through all the doors the services should be articulated around the patient. [IP09\_2]*

The organisation of Ais-Be, as described in Table 5 (Font, 2016), is structured around 4 main areas: The Integrated Healthcare Committee, the Standing Committee, the Technical Office and the Operational Committees.

**Table 5: Organisation of the integrated healthcare area of Barcelona Esquerra (Ais-Be).**

Integrated Healthcare Committee Barcelona Esquerra (CAISBE)	<ul style="list-style-type: none"> <li>• Representation of the first management level of all suppliers involved.</li> <li>• 1–2 meetings a year</li> <li>• Monitoring the Strategic Plan and the main lines of work.</li> </ul>
Standing Committee (SC)	<ul style="list-style-type: none"> <li>• Integrated Health Area "Barcelona Esquerra" (AIS-BE) Manager. Barcelona Health Consortium (CatSalut), Primary Care Manager of the Catalan Health Institute, CAPSE Manager, representative of each Hospital (Clínic, Plató, Sagrat Cor), Head of the Technical Office.</li> <li>• Fortnightly meetings.</li> <li>• Supervising execution of the plans and of the development of the work lines.</li> </ul>
Technical Office (TO)	<ul style="list-style-type: none"> <li>• Staff of the Standing Committee comprising 3 professionals and support for professionals from the institutions</li> <li>• Co-ordination and methodological support for the different Committees</li> </ul>
Operational Committees (OC)	<ul style="list-style-type: none"> <li>• Consisting basically of medical and nursing personnel of the institutions.</li> <li>• With a Co-ordinator for each Committee who reports to the TI and the SC.</li> <li>• Methodological support for the TO.</li> <li>• Proposals for improvements to organisation and processes, organising the role of each Hospital in relation with the Primary Care Teams both for the basic pathology and for tertiary care.</li> </ul>

Source: Font D. Et al (2016). Integrated Health Care Barcelona Esquerra (Ais-Be): A Global View of Organisational Development, Re-Engineering of Processes and Improvement of the Information Systems. The Role of the Tertiary University Hospital in the Transformation. International Journal of Integrated Care. 2016;16(2):8.

The basis of the organizational setting is common to the four Integrated Healthcare areas (AIS) of the city of Barcelona (*Consorci Sanitari de Barcelona, 2010*), with the necessary adaptations to the needs and priorities of each territory having the patient and the continuum of care at the centre of the organizational system.

*AIS considers as key requirement the involvement of all providers in the territory and must be equipped with a shared organizational system in which the focus is the patient and ensuring continuity of care. In this respect the roadmap is addressed to the joint workforce of professionals around pathologies, based on agreed process redesign and justified around scientific evidence and*

*the analysis of other complementary lines and circuits.*

*[CONSORCI SANITARI DE BARCELONA. Organització de les Àrees Integrals De Salut- Basis of the organizational System]*

The **Integrated Healthcare Committee** (CAISBE) is the final responsible of the programme in the territory and it is formed by the heads of all health service providers of the area and the Health Consortium of Barcelona (Consorti Sanitari de Barcelona). This Committee meets once a year to endorse the main lines of action proposed by the Standing Committee.

In a model like Ais-Be, the alignment of the management teams is mandatory. Hence, a **Standing Committee** (SC), including managers from primary care, hospitals and the Catalan Health Service is needed to coordinate all activities and set priorities. This Committee is the executive responsible of the project and it's composed by the chiefs of Ais-Be, the Barcelona Health Consortium, and representatives of the different providers at the territory. It is, as described during the interviews, the "transmission band" between the territory and the public health administration.

This SC is provided with a **Technical Office** (TO) which acts as a staff, providing technical support for the deployment of the project. The TO is responsible of the everyday tasks, according to the Working Plan approved by the Steering Committee, and to provide support to the Operational Committees. In the case of Ais-Be this office is composed of three persons (the responsible of the office and two persons from the territory working part time at the office) and it is situated at the Hospital Clínic, in order to be nearer the territory.

Last but not least, the key element in the organisation of Ais-Be are the **Operational Committees** (OC). The OCs are set according to the priorities defined in the Catalan Health Plan, to the projects prioritised by the management structures of Ais-Be or to the needs identified by professionals themselves. Each OC is led by a referent in the sector and composed by different providers involved in the area of specialty of the group, and by professionals from different levels and categories. OCs meet periodically working by consensus in the development of the activities defined in their working plan.

As described in the documentation (Font, 2016) the AIS-BE has more than 25 Operational Committees with the participation of more than 400 medical and nursing professionals from the different institutions and care levels. In practical terms there are more than 40 working groups (with physicians and nurses from hospital and primary care) that perform more than 80 activities mainly related to the definition of protocols and continuous education. More than 20 projects relate to improving the care through support of specialists to the community health services. Improving palliative care, intervention on poorly controlled diabetes patients, care for patients with allergic conditions, and renal diseases are examples of this type of intervention. During the interviewees this heterogeneous composition was emphasized as a key element for the integration of care in the territory. This is confirmed by a representative from the payer organizations:

*Well, you have more than 400 professionals working in this territory that gives service to 530.000 inhabitants, and that takes 4 districts of the city. And 400 professionals is not trivial, it's an important volume (...) In these groups you can work for the integration of processes, or at least you can put a first seed. And those 400 professionals all work in different organizations... [IP09-2]*

#### 4.3.2 Partnerships beyond the health system

The relationships with social care and long-term care are, at the present time, one of the deficits of the system.

In Catalonia there is a separation between the Department of Social Welfare and Family and the Department of Health. Under this system, the needs of the population are catered separately from one or other department. The Department of Health is responsible of the provision of healthcare services while the coverage of social needs and the provision of services is the responsibility of the City. Medical facilities have social workers that perform social diagnosis and liaison tasks but the management of the social care portfolio (home care attention, telecare, family workers, etc.) is in charge of the Department of Social Welfare and Family.

In terms of welfare, this separation has not proven to be the most suitable to provide effective and quality care to the patient who receives benefits from both types simultaneously. Particularly, in the case of chronic patients, the lack of coordination between social and health services is a source of inefficiencies for the system. As a representative from the payer organizations reports:

*We have not reached social work yet... We have global projects, we speak a lot but they go separately. You have the department of Social Welfare that works on one direction, and then the Barcelona Local Council, which manages resources that, at the end, are the most useful: telecare, home meals, cleaning services, family worker... or other things that can help in the typical case of chronicity... [IP09\_2]*

As several interviewees have pointed out during the field work, many of the difficulties experienced by chronic patients are related to social problems (access to meals, loneliness, lack of autonomy for daily tasks, etc.) and these problems end up impacting the health system, with patients being hospitalized or going to the emergency services for the impossibility of attending their daily needs rather than health problems.

This is also a barrier for domiciliary attention and home hospitalization and constitutes a filter for the selection of patients treated in these programmes, since the nonexistence of an able caregiver is an exclusion factor to enter the programme. Therefore, patients that could be treated at home if proper social support were in place have to remain at the hospital. One physician talks about as follows:

*We've had patients, women, who were the ones cooking at home. Caregivers, or 85 years old couples.. And then, you see a man who is 85 years old, and has never fried an egg.. And finally, they decide, because we cannot force the patients. We tell them <who is going to cook?, Madam, you wear oxygen, you cannot be near the cook> And then, if he wants to cook, fine, if not, then she stays at the hospital. [IP04\_2]*

However, in order to reduce current social inequalities in health, the Catalan Health Plan for 2016-2020 considers as core of its strategy the integration between current public socio-economic and health areas of action.

## 4.4 Workforce

The Implementation of community-based collaborative management of Complex Chronic Patients (CCP) at Ais-Be has required changes in existing roles and the creation of new professional figures. These transformations are derived from the organisational changes addressed to the integration of care pathways as well as the introduction of new programmes, such as home hospitalization and the model of care for CCP, which requires a holistic approach and coordination among different levels of care.

### 4.4.1 Changes in existing roles

Organizational transformations linked to the integration of care have resulted in changes in existing roles, with a shift in the distribution of tasks between primary care and hospital care and a new model based in team work in interdisciplinary teams during transitional and long term care.

With the reform of primary care, specialists from the hospital move to primary care centres on a regular basis, according to a schedule established for each case. Usually, when the specialist goes to primary care, internal meetings are conducted for the discussion of particular cases and resolution of doubts, with the specialists acting as consultants of the primary care team. But this implies a change in the model of work and in the coordination between the different levels of care and professionals. The underlying idea is that the process revolves around the patient, and not the other way round. Therefore, organizational structures and boundaries between primary care and hospital care are diluted and, at the same time, the relationship between professional narrows, requiring a greater coordination between all professionals involved in the process of care.

One of the professionals which has required an adaptation to the new paradigm is the family doctor. As it has been noted during some of the interviews (IP05\_2, IP07\_2) the reorganization of care has transformed the relation between primary care, hospitals and specialists, with the family doctor gaining prominence in the care of CCP. Thus, family doctors are expected to acquire a central role in the care of CCP, with the support of the specialists and, if needed, hospital services.

Another important transformation is the change of role of primary care nurses. As noted during the interviews (IP10\_2) those professionals have a very close contact with patients, especially in the case of CCP, and they acquire a very important role in the all the process of care, with special importance to all tasks related to information, training and education. Under the model of care of CCP primary care nurses assume new tasks related to empowerment of patients, change of habits and promotion of healthy life styles. This is carried out both through individual and group training programmes, for which new competences are required in communication and in the handling of groups of patients. Additionally to these tasks, nurses also take on a key role in the monitoring and follow up of patients, and, with the support of advanced nurses from the hospital, assume the care of patients that otherwise should have been derived to the hospital. This requires abilities for team work, coordination with multidisciplinary teams and a deep knowledge of the different pathologies involved. As one of the nurses reports:

*A specialized nurse from the hospital comes to primary care and gives solution to the patients that should have been derived to the hospital for complex insulinizations (...) and instead of taking that patient to the hospital, we take care of him at primary care, with the support of the specialized nurse and the endocrine. And when we have doubts or we don't know how to do it, we work together with*

*the specialized nurse. [IP10-2]*

#### 4.4.2 New roles

In parallel to the transformation of existing roles, there are also new roles linked to the care of CCP, and to the integration of services.

Probably, where changes have been more substantial is in the nursing profession, with the appearance of a set of different profiles: the case management nurse, the advanced practice nurse from hospital and the liaison nurse with different roles and responsibilities but a common set of professional competences.

The advanced practice nurse is described by the persons interviewed (IP02\_2, IP05\_2, IP07\_2) as a highly skilled nurse, specialized in a particular aspect of the process of care. It can be a nurse that has a deeper knowledge of a given pathology or of the different equipment's that are mobilized during home care and who can act proactively in the care of patient, but, in any case, it's someone who can act as an expert nurse and be proactive in the care of the patient. As far as the professional profile of these nurses is concerned, a wide experience is needed, if possible in the surgical field as well as post-graduate training, either at master or doctorate degree.

The case management nurse plays a role of coordination of the different specialists involved in the treatment of a chronic patient, acting as a link between different professionals. As one of the interviewed described this role, the case management nurse is the main reference person for the patient, guaranteeing the continuity of care. Thus, when the patient is stable, the case management nurses is in charge of its monitoring and follow up, and when an exacerbation occurs, it's the turn of the specialists to intervene. According to the information gathered during the field work, the profile of this professional is also one of an expert nurse, with a deep knowledge on the pathologies of the patients he or she is treating, and with strong relational competences, especially in relation to team work, proactivity and autonomy.

*This is the role of the case manager, to put order in the confusion generated by different doctors that are seeing only one part of the patient. This fragmentation is the one solved by the case manager (...) I would say that the strength of the case manager is giving continuity to the patient, monitoring the patient with low intensity but frequently... [IP05\_2]*

Finally, the liaison nurse is a new profile in charge of managing the relationship between primary care and hospital care. During the duration of the programme this profile has experienced different changes, since at the beginning of the process of integration of care, liaison nurses were located at the hospital while now they are at the primary care centres. As one of managers of the programme this position has to do with the model of care, and each option has strengths and weaknesses. Finally, the organization has opted for a model in which liaison nurses are situated in the community, reinforcing the central role of primary care in the attention of CCP.

*It was decided that it was better that each territory had its own liaison nurse. It was a change of model, because before these nurses were at the hospital, and the new model is locating liaison nurses at the territory. [IP07\_2]*

This nurse is in charge of following up patients from primary care that are admitted in the hospital. When a CCP is discharged from the hospital, the liaison nurse is informed in order to activate all the services needed to guarantee the continuity of care of this patient. One nurse reports in this context:

*The liaison nurse (...) is the person that receives all the discharges from the hospital, or the notice that a frail patient is going to leave from the hospital, and he will need home attention, or that he will need rehabilitation, or family support, or that the patient will come directly to the consultation. And the liaison nurse acts as a link between these frail patients, who have many readmissions at the hospital, and works with the social workers, from the hospital or from primary care, to deal with complex situations. [IP10\_02]*

With regard to medical professions, the emergence of home care attention has led to the emergence of a new role: the **homecare attention physician**.

Though the medical tasks performed by this professional may not vary from the ones carried out in conventional settings, the abilities and competences needed for this task are quite specific. Being the patient at home, the physician must be confident and have tolerance for risk, something that, according to the interviewees is not easy to achieve at the beginning. This is further explained by one physician:

*I was used to deal with patients with serious affections, and those patients [from the hospital at home program] may not be so serious, they could be in internal medicine or in pneumolgy. The patient is the same, the problem is the situation. The situation is different because they are at home, and they won't have a nurse 5 minutes after they have a complication, and you have to learn this. At the beginning I didn't dare to take particular patients, and now I thing "how am I taking them now, 8 years ago this was out of the question". That's what experience teaches you. [IP04\_2]*

Another important competence for this profile is the ability for team work. Patients attended are monitored by nurse, and the physician must be confident on the ability of the nurse to conduct this task.

## 4.5 Technologies and medical products

### 4.5.1 Current technologies and medical products

Different technologies and medical products have been used up to now to complement the programmes for the integration of healthcare services described above.

The re-organizational process undertaken in Ais-Be has been supported by an intranet ([www.ais-bcn.cat](http://www.ais-bcn.cat)) to facilitate the collaborative work of the professionals in the territory, and its contents are the outcome of the work of the OC. This intranet is the basis for the sharing of knowledge among professionals, and all the contents and products generated by OC can be found in the platform. The part of the information that is general to Ais-Be and the materials oriented to patients and the public have no restrictions on access.

The integration of services impulse by Ais-Be has also been accompanied by a communication platform among providers. The assumption is that sharing of information among different providers and levels of care is essential for the deployment of an integral care system.

As noted during the interviews, at present the different providers operating in the area use their own information systems, and this is an important barrier for integration. In order to overcome this situation, one of the activities performed through Ais-Be has been the implementation of a communication platform that allows the automatization of processes through messages that are sent from one supplier to another and which are integrated in the information systems of the providers involved in the care of a



patient. For instance, the primary care centre uses the platform to send a message to the hospital to request an intervention, the hospital sends a message to the primary centre containing the report of the intervention and once the intervention is completed, the discharge report is sent to the family doctor.

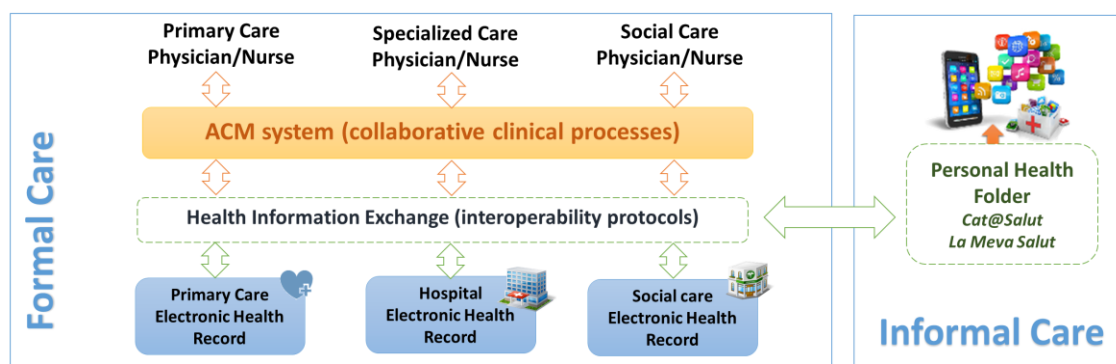
Communication technologies are also used in the case of patients being treated at home. This is especially useful in the case of CCP with mobility problems, where holding of teleconferences between the nurse and the physician, or with the specialists treating the patient avoid the mobilization of the patient. Several pilots have been also conducted on the application of telemedicine and online monitoring of patients, and, though results have been very positive, they have not been implemented at large scale.

#### 4.5.2 Future technologies and medical products

According to the documents analysed (Cano, 2016) in an scenario of integrated care services following an ACM (Adaptive Case Management) approach (Figure 11), ICT has a major role, not only to support the collaborative clinical process among the different healthcare professionals, but also to facilitate interoperability among heterogeneous healthcare providers, each one using proprietary health information systems.

The NEXTCARE project involves deployment of a Digital Health Framework bridging formal care and informal care through adoption of patient's Personal Health Folders as management tools. Briefly, informal care includes any aspect with impact on health (e.g. life style, environmental and behavioural aspects, etc.) occurring in the community, whereas formal care refers to any interaction with health professionals at different levels of the healthcare system. Overall, the Personal health Folder will allow to potentially collect relevant data about habits and behaviour of the patient (e.g., fitness activities, diet, physical activity, etc.) in order to support patient empowerment, self-care, and adherence.

Figure 11: ICT requirements to support ACM at a glance



Source: Cano I et al. (submitted 2016). Protocol for Regional Implementation of Community-based Collaborative Management of Complex Chronic Patients. NPJ Primary Care Respiratory Medicine.



The project will build the above specific ICT solutions to support ACM upon the regional (Catalan) **digital health framework (DHF)** being deployed by TIC-Salut Office of Standards and Interoperability ([www.ticsalut.cat/estandards/en\\_index](http://www.ticsalut.cat/estandards/en_index)). The DHF is composed of the following main components (Figure 12):

- The **Catalan health information exchange system** (i.e. **WiFiS**) leads the integration of basic highly standardized processes, namely: medical appointments, clinical data exchange, medical referral, etc., among healthcare providers with heterogeneous proprietary systems (moreover, it could also perform sectorial message routing and message delivery control).
- The **shared electronic health record** (i.e., **HC**) of Catalonia is a single system of medical records shared between different actors. The HC3 allows to i) Display of information that collects socio-demographic data of the citizen, documents or reports, prescriptions and immunization plus a summary screen with the most recent and relevant references; ii) provide direct messaging between professionals to facilitate their cooperation; iii) add at a later date, with ad hoc rules, clinical data provided by the private health sector or the proper citizen.
- The **Personal Health Folder** (i.e., **Cat@Salut LMS**) of Catalonia is linked to HC, and provides citizens with an access point to information about their health insurance. Cat@Salut LMS can also act as the citizen entry point for some of the supported processes (e.g. Medical appointments) and potentially for informal health data sources (e.g. mobile health applications, community medical devices, etc.).

**Barcelona-Esquerria Health District in the Barcelona Health Sector**

5,162,947 inhab.

**Personal Health Folder (Cat@Salut)** ↔ **Citizen**

**Catalan Shared Electronic Health Record (HC³)**

- Clinical reports
- e-Prescription
- Digital image

**Primary Care Electronic Health Record (EHR)** ↔ **Social care Electronic Health Record (EHR)** ↔ **Hospital Electronic Health Record (EHR)**

**Health Information Exchange (WiFIS)**

- Laboratory processes
- Medical appointment processes
- Clinical Data exchange processes
- eDiagnosis processes
- Medical Referral processes

Messaging (HL7 v2.5/3.0) | Security (IPsec, Audit Trail, Node Authentication)

Terminology SNOMED-CT, SERAM, SEMN, LOINC, etc. | Message Routing

**Catalan Region (7,820,118 inhab.)**

**Lleida Health Sector (378,438 inhab.)**

**Terres de l'Ebre Health Sector (191,758 inhab.)**

**Camp de Tarragona Health Sector (614,771 inhab.)**

**Catalunya Central Health Sector (530,086 inhab.)**

**Girona Health Sector (870,360 inhab.)**

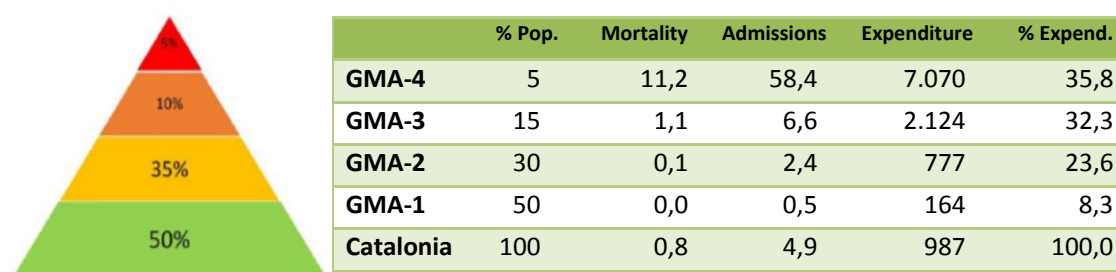
**Alt Pirineu i Aran Health Sector (71,682 inhab.)**

#### 4.6 Information and research/monitoring

The proposal in the current CCP programme is to use the GMA for identification of candidates for the programme on Community-based management of CCP. Moreover, it is planned to incorporate the classification of the patient in the population-health risk stratification pyramid as one of the covariates for clinical risk predictive modelling in the clinical scenario for long-term management of these patients. In this respect, prospective assessment of both practicalities and quantification of the added value of the use of population-based predictive modelling for enhanced clinical risk prediction and stratification has been successfully completed in Catalonia for the entire population of patients with chronic obstructive pulmonary disease (COPD) to be further extended to other conditions. The outcome from the GMA for a given citizen/patient currently appears in the screen of the clinical workstation of all

healthcare professionals. The current CCP programme should foster the current display of the GMA results to evolve providing enhanced support to health professionals. It is accepted that each health risk stratum should associate plans of intervention in order to provide efficient and proactive care. These plans will be developed and assessed within the CCP programme.

Figure 13: Stratification of the Catalan population (2014) using the GMA.



Source: Cano I et al. (submitted 2016). Protocol for Regional Implementation of Community-based Collaborative Management of Complex Chronic Patients. NPJ Primary Care Respiratory Medicine.

On the other hand, the services carried out by the Integrated Care Unit have been thoroughly evaluated, providing positive results both in terms of efficiency and satisfaction. Evidence obtained from the four ICT-supported integrated care services with a global project perspective can be found at *Hernandez C (2015) Integrated care services: lessons learned from the Deployment of the NEXES project*, and is summarized in Table 6. Several elements of the four established services, in particular from HH/ED and Enhanced Care, are included in the two CCP services: (i) Community-based management of CCP, and (ii) Integrated Care Management for patients under LTOT.

Table 6: Summary of MAST assessment

Wellness & Rehabilitation	
<b>D1: Safety issues</b>	Clinical and technical safety. No patient discomfort
<b>D2: Clinical effectiveness</b>	Efficacy (W&R main results)
<b>D3: User perspectives</b>	Patients higher satisfaction using Personal Health Folder (PHF) functionalities than using SMS only Professionals agreement with the setting
<ul style="list-style-type: none"> <li>• Patient perspectives</li> <li>• Professionals' perspectives</li> </ul>	
<b>D4: Economic aspects</b>	Cost-effectiveness analysis needed
<b>D5: Organizational aspects</b>	Need to define characteristics of mainstream service and its organizational impact
<b>D6: Socio-cultural, ethical and legal aspects</b>	Regulatory issues to articulate informal (PHF) and formal care (Electronic Health Record) pending
<b>D7: Transferability</b>	High level of transferability
Enhanced Care	
<b>D1: Safety issues</b>	Within safety zone and no technical threats.
<b>D2: Clinical effectiveness</b>	Efficacy, but two factors limiting effectiveness for community-based deployment: i) workforce preparation;

	and, ii) individual risk assessment and stratification
<b>D3: User perspectives</b> <ul style="list-style-type: none"> <li>• Patient perspectives</li> <li>• Professionals' perspectives</li> </ul>	Global patients' satisfaction - SUMI score 63 (CI 58.8 to 66.2) Professionals acknowledged empowerment role in the different tasks
<b>D4: Economic aspects</b>	Favourable cost-effectiveness incremental ratio
<b>D5: Organizational aspects</b>	Incentives for adoption are important as well as novel payment modalities (e.g. bundle payment)
<b>D6: Socio-cultural, ethical and legal aspects</b>	Data privacy for information transfer was ensured**
<b>D7: Transferability</b>	Transferability to community should be enhanced through lessons learnt
<b>Home Hospitalization and Early Discharge</b>	
<b>D1: Safety issues</b>	Safety associated to patient eligibility criteria
<b>D2: Clinical effectiveness</b>	Effectiveness (HH/ED main results)
<b>D3: User perspectives</b> <ul style="list-style-type: none"> <li>• Patient perspectives</li> <li>• Professionals' perspectives</li> </ul>	High rate of patients' satisfaction (95%)
<b>D4: Economic aspects</b>	Cost-effectiveness at health system level. Need for reimbursement incentives at provider level
<b>D5: Organizational aspects</b>	Shared-care agreements between hospital and community needed
<b>D6: Socio-cultural, ethical and legal aspects</b>	Technical functionalities compliance with ethical and legal regulations
<b>D7: Transferability</b>	Transferability modulated by existence of collaboration between hospital and community, reimbursement models, and ICT-supported collaborative tools
<b>Support to remote testing</b>	
<b>D1: Safety issues</b>	No clinical or technical safety concerns
<b>D2: Clinical effectiveness</b>	High effectiveness (Support main results)
<b>D3: User perspectives</b> <ul style="list-style-type: none"> <li>• Patient perspectives</li> <li>• Professionals' perspectives</li> </ul>	Patient perspective does not apply to this study. Professionals satisfaction (86% (n = 126); score 7.3/10)
<b>D4: Economic aspects</b>	Cost-effective
<b>D5: Organizational aspects</b>	No major impact on organizational aspects
<b>D6: Socio-cultural, ethical and legal aspects</b>	No socio-cultural, ethical and/or legal issues
<b>D7: Transferability</b>	Highly transferable

Source: Hernandez C (2015). Integrated care services: lessons learned from the Deployment of the NEXES project

## 4.7 Financing

Description of current reimbursement models of CatSalut (payer) to healthcare providers are reported in the macro level description. Moreover, constraints generated by current modalities of payment for adoption of integrated care were already reported in the BSA programme. It is of note that the system is exploring novel modalities of incentives through specific contracts (i.e. Home Hospitalization). A comprehensive analysis of both scalable modalities of reimbursement fostering care integration was carried out within the NEXES project (Hernandez C, 2015).

During the NEXES project, integrated care services were assessed from an economic perspective (Hernandez, 2015). The result of this assessment was that the project showed favourable cost-

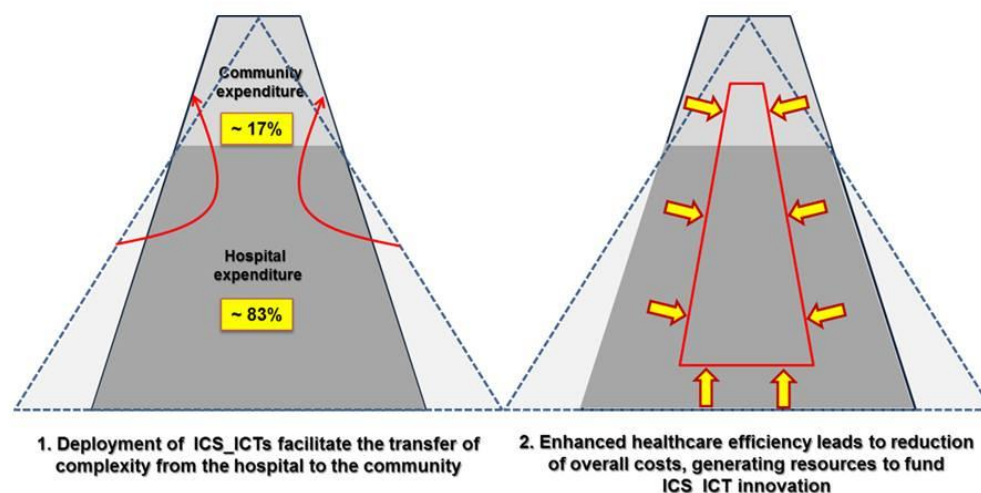
effectiveness ratios. These positive results were largely due to the avoidance of costly institutional care (hospital admissions) and the transferring of complex services to community providers.

The process of deployment of the integrated care services led to an enrichment of the entire healthcare value chain with new roles for the existing providers and the emergence of new participants that may generate additional opportunities for team development.

According to the conclusions from the NEXES project, the proposed business model (Figure 14) should rely on the relationships of the two core types of stakeholders: (i) the payer(s); and, (ii) the healthcare providers covering different healthcare tiers. The other components of the value chain (industrial, integrators, operators, etc...) should interact through mainstream healthcare providers.

NEXES thoroughly analysed the expected impact of different modalities of reimbursement on the deployment of integrated care services assessing the effects on the business case, their role as incentives for adoption and their potential for generalization at a health system level. Finally, payments by activity and by capitation were discarded, with proposed payments by outcomes using a bundled approach with specific features to ensure service adoption and the take-up of appropriate technological investments. Bundled payment should be perceived as a way to incentivise collaboration among providers in order to move to less intensive and expansive care that would result in better health outcomes. Healthcare providers would have broader incentives to achieve savings, so that the margins are kept or may even increase. Technological innovation is thus considered part of the bundled payment and not a specific reimbursable charge in the proposed model. The payer would seek an overall reduction in the healthcare expenditure bill, so that the bundled payment, in the context of a shared-risk scenario, could provide a cost reduction with better quality of care, moving beyond specific interests of any one component of the system.

Figure 14: Expected initial effects of the introduction of Bundled Systems with shared risks



**Expected initial effects of the introduction of Bundled Systems with shared risks.** The top portion of the left triangle (discontinuous line) indicates the percent of hospital expenditure (~17%) that can be transferred to the community as Integrated Care Services. Those services are less intensive and less expensive. It will likely enlarge the top portion of the left figure (>17%) narrowing its base (<83%) in order to achieve aggregate cost savings and better margins (for a given reimbursement rate). The right figure displays the expected changes at provider's level after reorganization through Integrated Care Services supported by Information and Communication Technologies. The provider would have broader incentives to achieve savings over time (arrows), so that margins stay larger or increase.

Source: Hernandez C (2015). Integrated care services: lessons learned from the Deployment of the NEXES project

The business model generated by NEXES was conceived as a recommendation that requires further validation. The aim of the proposal was to facilitate scalability of the deployment of integrated care at health system level. The transfer of approximately 17% is supported by the literature (Figure 14).

As analysed in the macro level description of Catalonia, the existence of one public payer (CatSalut) offers room for aligning reimbursement modalities & incentives to goals associated with transformation of the healthcare system toward an integrated approach. However, there are factors, namely: i) separate budgets between Primary Care and Hospital Care; ii) low percentage of budget devoted to pay-per-performance (< 5%), and, iii) recent economic healthcare cuts that generate rigidities and constraint needed changes in the financial schemes that would generate incentives toward integration across healthcare tiers. It should be highlighted that there are two useful tools to promote care coordination: i) budgetary arrangements associated with specific programmes (this is the case of home hospitalization at Hospital Clinic); and, ii) innovation of public procurement (it can be a future case, in 2017, for the collaborative forced spirometry program).

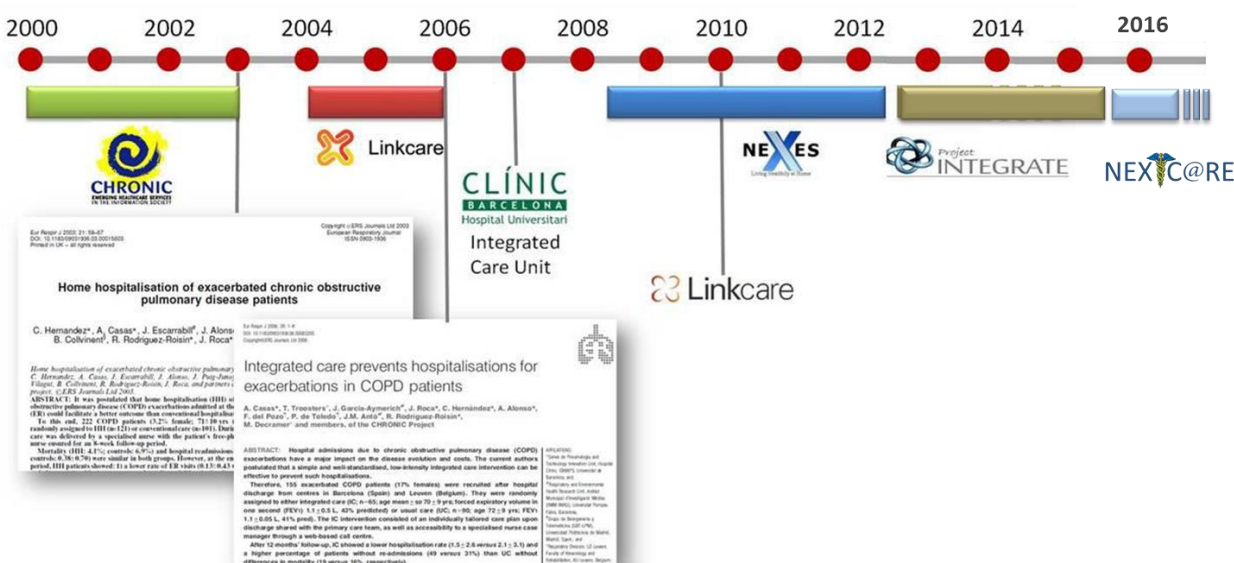
In summary, sustainability of large scale implementation is closely associated with successful implementation of novel modalities of reimbursement that generate incentives for innovation on ICT-supported integrated care services, as well as deployment of services with shared goals across between specialized and primary care taking into account integration with social support.

#### 4.8 Implementation process

The Implementation of Community-based Collaborative Management of Complex Chronic Patients is the result of various projects and initiatives combining innovation and research that started in 2000 through different research and innovation projects addressed to implement a new model of integrated care.

Figure 15 highlights the main steps that took place from the conception of the initial integrated care programmes for COPD patients until the launching of the NEXTCARE project.

Figure 15: Timeline showing the main phases in the development of Integrated Care Services in Hospital Clínic.



Source: Author elaboration based in Alonso A, Sampietro-Colom L. (2014). Project INTEGRATE. Final Case Report for COPD

According to documents available (Alonso, Sampietro-Colom 2014) the development of Integrated Care Services at Hospital Clínic was triggered by the need to find a solution to the impact of the seasonal exacerbation of COPD patients in the planning of the surgical area of the hospital. Back to year 2000, exacerbated COPD patients seen at the emergency department were usually admitted for a stay of 5-8 days on average. During these seasonal periods, quite often, the regular beds of non-surgical wards were insufficient to cover the demand. As a result, planned surgical activity had to be postponed for a later date. In a significant number of cases, this was an activity that could only be carried out at the hospital. It must be noted that the Hospital fulfils two different roles: it is a tertiary university hospital



providing complex treatments but it is also the community hospital of reference for an urban population of 540.000 inhabitants. So, in a way, there was a clashing of interests of these two profiles.

An additional important point was an extended feeling among clinicians that there was room for improvement in the management of exacerbated COPD patients. Even if exacerbations were treated according to the most up-to-date evidence based guidelines, and patients were stable at the point of discharge, up to 30% of the cases had to be readmitted due to a new exacerbation in the following 8 weeks. This readmission rate was similar in other European hospitals, regardless of its size, level of specialisation, location or health system. So, the problem seemed to be focused on some characteristics linked to the proper management after patient's discharge. To tackle the problem, a small group of clinicians from the respiratory medicine department started to look at possible alternatives in the provision of care services for these patients.

This situation led to the development of the CHRONIC project (2000-2003) which was followed by the LINKARE project (2004-2006). These two projects were addressed to COPD patients and were the embryo of the future home hospitalization service. Results were very positive, showing a significant reduction on the use of emergency and hospitalization services, a high satisfaction among patients, an improvement of adherence and a reduction of superfluous medication.

From 2006, starts the deployment of a new model of attention with two processes: the organizational change and redesign of care processes at a territorial level through Ais-Be and the start-up of the integrated care unit (NEXES Project)

The implementation process and the stakeholders involved differed for each case.

According to the documentation describing the process of the creation of Ais-Be (Font, 2016) in 2005 the Catalan Health Service (CHS) asked the Hospital Clínic to integrate all specialists working in isolation in the community in the hospital services. A diagnosis was made of the starting and important dysfunctions were identified together with a great potential for improvement in co-ordination between the different suppliers to Ais-Be, notably: i) variety among the suppliers, ii) lack of a shared definition of goals and of a territory-based finance system, iii) incomplete definition of the role of each supplier, in caring for the basic disease and also in medium-high complexity, iv) potential for improvement in the scheduled processes with a great concentration of urgent activity in the Hospital Clínic de Barcelona, and v) lack of knowledge among the various bodies, great resistance to change and fear of losing.

Starting from this initial diagnosis a project was set up to improve healthcare quality and public accessibility, based on co-ordination between the various suppliers and their professionals, seeking the optimal use of each care level in terms of efficiency. For the development of the project a follow-up body was set up with differentiated working groups to define the organisational structure, the information systems requirements and the care processes.

The Ais-Be is, therefore, a project launched by the Catalan Government and led from the Health Consortium of Barcelona. According to the information gathered during the interviews (IP09\_2) The initiative of the creation of Integrated Health Areas (AIS) came from the government and a meeting was held in December 2006 with all the health providers (primary attention, big hospitals, small hospitals, emergency services, etc.) of the city with the idea to initiate a network and coordinate the provision of



health services. This led to the creation of working groups to reach a consensus and after two years the new structure of the AIS was approved in the general assembly.

The participation of professionals is a key element for success. Initial resistances have evolved toward deep collaboration in the programmes. It is of note that resistance to deployment of integrated care are dynamic. Consequently, management change strategies must be implemented and active throughout the entire process of deployment.

On the other hand, the European Union project NEXES was initiated to assess the deployment of Integrated Care Services supported by Information and Communication Technologies. The underlying common hypothesis was that the transfer of care complexities from hospital-based care to the community using a patient-centred management approach could enhance health outcomes with associated cost-containment (Hernandez 2015).

Behind these programmes there was an interest to gain efficiency and reduce costs, which, together with the high satisfaction of the patients, convinced the hospital management to continue with the programme. The existence of previous projects demonstrating good results for integrated care was, therefore, one of the main arguments for the deployment of the Integrated Care Unit. As one of the managers of the programme notes:

*The Hospital at Home programme depends exclusively from the hospital, and the patient instead of being at the hospital is at home, and is visited in a daily basis (...), and CatSalut pays us for each discharge. Without this programme, the patient would be at the hospital. And we demonstrated very positive results, the patient treated at home had less readmissions, less visits to emergency services, and, more important, less costs. But for me the key factor was that the satisfaction of the patient was very good. Both patient and caregiver. And 98% of patients and caregivers said "if I ever need to go to the hospital, I want to be with you, at home". And these good results drove the management of the hospital to say "ok, now, we will extend the programme to all pathologies". [IP01\_2]*

From October 2016 these two programmes converged in the NEXTCARE project.

NEXTCARE is a proposal for innovation in health services addressed to the design, evaluation and large scale implementation of five actions aiming at generating healthcare-value at system level. One of these actions (action 3 – complex case management) will be deployed through SELFIE.

The Hospital at Home service depends exclusively from the hospital, and the patient instead of being at the hospital is at home, and is visited in a daily basis (...), and CatSalut pays us for each discharge. Without this programme, the patient would be at the hospital. And we demonstrated very positive results, the patient treated at home had less readmissions, less visits to emergency services, and, more important, less costs. One of the key factors was that the satisfaction of both patients and professionals was very good. Ninety eight percent (98%) of patients and caregivers said "if I ever need to go to the hospital, I want to be with you, at home". And these good results drove the management of the hospital to say "ok, now, we will extend the programme to all pathologies".

## 4.9 Discussion

### 4.9.1 General discussion of the programme

The Ais-Be project was launched in 2006 to improve the care coordination between different providers and care levels in one of the healthcare sectors of the city of Barcelona attending 524.000 inhabitants. From then on, continuous work towards functional integration of services in a complex system including heterogeneous providers has been carried out. There are three distinctive traits in Ais-Be model:

1. The change is driven by Hospital Clinic, a highly specialized academic institution producing first class research at international level. The mission of the Institution reinforces its dual role as reference centre and as a hospital serving its community. An immediate consequence is that enhancement of the relationships between tertiary and primary care is a core component of the integrated care programme. The driving hypothesis is that an appropriate transfer of care complexities from specialized care to community-based care within an integrated care scenario may highly increase healthcare value generation both at provider and at health system levels. In this regard, the programme shows clear differences with other integrated care programmes mainly focused on elderly with horizontal integration at community level.
2. The programme has successfully progressed with a building-blocks strategy that allows to manage its complexity. It has had, as a consistent core goal, to foster appropriate cross-fertilization among: i) healthcare; ii) innovation & research on biomedical sciences with a systems approach; and, iii) innovation on education with focus on new professional roles. It has been that way since early background research & innovation initiatives addressing design of novel integrated care services supported by ICT tools (i.e., the EU project Chronic from 2000 to 2003). Nowadays, one of the key goals is to achieve a proper convergence between sustainability of integrated care and implementation of systems medicine for chronic patients, as planned in the Nextcare project.
3. A profound re-organizational change (Font D, 2016) carried out during the whole implementation period, and still on going, has been one the principal elements contributing to the success of the initiative. Both past and planned ICT innovation has always follow cultural and organizational adaptive changes. The central driving force being deployment of innovative integrated care services generating healthcare efficiencies.

The deployment of integrated care has been accomplished mainly through the joint work of more than 400 professionals involved on the Operational Committees, which during the last 10 years have been working together in the creation of common protocols and the integration of attention processes. The results obtained go far beyond the contents produced by the groups (which respond to real needs of daily work and are used by professionals in the territory). Collaborative work based on consensus and networking have resulted in the creation of personal bonds among professionals working in the territory, reinforcing relationships among them and removing barriers between providers, categories and levels of care. This work has had a real impact in the territory and in the attention to patients, who are positioned at the centre of the organizational system created by Ais-Be.

The success of Ais-Be relies in the alignment and implication of the management teams in the model, and, more specially, in the transfer of responsibility to professionals. Under the Ais-Be model clinical problems are solved by clinical committees (and not by the administration) through the debate and discussion between professionals from different professional profiles, belonging to different organisations and working in different levels of care.

Another factor for success has been the creation of a communication platform that allows the exchange of information between all the actors involved in the provision of healthcare in the territory, regardless of their information system. This platform, which is simple but robust and agile, has played a central role in the system, facilitating the continuous of care and the creation of care pathways at the territorial level.

With regard to the model of attention, the deployment of an integrated care for CCP constitutes a step forward towards integration of care for chronic care patients. This model is based in a highly personalized medicine, based in a thorough characterisation of the patient and an extensive evaluation of the patients' needs. As a result, a personalized working plan is drawn for each patient, in which a holistic approach is adopted, and where the care process is accompanied by health education and empowerment of both the patient and caregiver.

This model of attention has demonstrated a good performance from a cost-efficiency perspective, but also very positive results in terms of both patient and health professionals satisfaction.

#### 4.9.2 Discussion of the programme in the context of the conceptual framework

##### Service delivery

The two complementary implementation services are fully aligned with the recently released Catalan Health Plan (2016-2020), as reported in the macro level description. The Community-based integrated care of complex chronic patients covers two well differentiated goals: i) transitional care between hospital and community; and, ii) long-term enhanced care of multi-morbid patients. The initiative on enhanced management of patients under Long-Term Oxygen Therapy was selected because it constitutes an excellent model of shared goals between all relevant actors: i) patients; ii) primary care professionals; iii) specialized care; iv) administration; and, v) home service providers, that can be generalized to many other care modalities for chronic patients. One important final aim is to achieve full ICT convergence among all telemedicine initiatives currently in pace at Hospital Clinic.

However, the analysis of the service delivery acknowledges several grey areas that need improvement in the forthcoming months, namely:

- i) Implementation of collaborative adaptive case management supported by appropriate ICT tools;
- ii) Enhanced clinical risk assessment and stratification feeding clinical decision support tools (CDSS);
- iii) Improvement of the articulation between specialized and community care reinforcing the role of advanced practice nurses, support of specialist to community care and reinforcement of the role of the primary care physician (and his/her team) as single entry & coordination point;

- iv) Strengthen the impact of educational programmes to prepare work force for new roles and collaborative work in an integrated care scenario;
- v) Increase accessibility of patients through a 7/24 call centre as well as optimization of the personal health folder; and, finally,
- vi) Reassess specific aspects wherein a degree of dissociation between documents and interviews has been detected. For example, coordination and joint actions between specialized and primary care teams (i.e. joint home visit after 72 h of hospital discharge in selected patients or creation of multidisciplinary teams across healthcare tiers).

### **Leadership and governance**

The organizational changes in Ais-Be contributed to built-up a culture of collaboration and networking that facilitates alignment of heterogeneous structures with shared, or converging, goals. We are currently on the process of consolidating a multi-strata governance that will foster convergence between large scale deployment of integrated care and implementation of systems medicine

### **Workforce**

We have identified that in addition to a culture of organizational change already successfully implemented in Ais-Be, there is a clear need for functional evolution toward: i) implementation of new professional roles, ii) enhanced skills for collaborative work around clinical processes (not only episodes or diseases); iii) higher resolution capacity of community-based professionals; and, iv) enhanced adaptation to ICT challenges. The report describes achievements in this area and acknowledges unmet needs that are planned to be accomplished within the life span of NextCare (2016-2020).

### **Financing**

The NEXES project generated a conceptual business model providing service sustainability for large scale deployment of integrated care with generation of value at health system level as well as incentives for the actors with different complementary roles in the healthcare chain. However, we acknowledge current limitations of the reimbursement modalities as well as the negative impact of the recent economic cutbacks. It is envisaged that appropriate negotiations on the budget for deployment of specific integrated care services and innovation on public procurement are two potential strategies to pave the way towards consolidation of business models facilitate sustainability of integrated care, as proposed in NEXES.

### **Technologies and medical products**

Current ICT developments supported by the existing health information exchange platform at healthcare sector level and by the shared electronic health record (HC<sup>3</sup>) at regional level provides valuable support to the programme. Moreover, facilities such as electronic prescription, etc. have allowed current developments of integrated care in Catalonia.

The report indicates the priorities for the next three years to be developed in the context of Nextcare. That is, evolution of the current personal health folder from an accessibility tool to self-management tools integrated into both the shared electronic health record at regional level (HC<sup>3</sup>) and to main providers. A second main challenge is to consolidate a collaborative adaptative case management platform on top of the existing ICT systems. Finally, ICT supported integration of social services is a must already prioritized by the Catalan Health Plan 2016-2020. At Hospital Clinic level, the convergence between integrated care and systems medicine for chronic patients requires further ICT developments leading to deployment of the biomedical research component of the Digital Health Framework (as formulated by Cano I, 2015).

### **Information and research**

The functional alignment of initiatives undertaken by three platform activated in Ais-BE; namely: EIT-Health (i.e. Patient Miner, Innovation on Big Data for Health Summer School; Sport4Health, etc...); EIP-AHA (Commitments by Hospital Clinic); and, RIS3CAT (Nextcare) should contribute to cross-fertilization among healthcare, research and innovation, as described above.

#### 4.10 Appendix I: List of persons interviewed

Interview partner number	Stakeholder	Interview date
IP01_2	Coordinator of the Integrated Care Unit	27/06/2016
IP02_2	Integrated Care Unit (Nurse)	27/06/2016
IP03_2	Caregiver	28/06/2016
IP03_2	Patient	28/06/2016
IP04_2	Integrated Care Unit (Pneumologist)	29/06/2016
IP05_2	Innovation Directorate	05/07/2016
IP06_2	Caregiver	05/07/2016
IP06_2	Patient	05/07/2016
IP07_2	Director of chronic care	06/07/2016
IP08_2	Social worker	06/07/2016
IP09_2	Director AIS Barcelona Esquerra	07/07/2016
IP10_2	Nurse	11/07/2016
IP11_2	Cap de Procesos Assistencials. Oficina Tècnica AisBe	14/07/2016

#### 4.11 Appendix II: List of quotations

*De tot això i de professionals que li veuen interès en tot això que hem guanyat, és que professionals que no es parlaven, que no es coneixien... que es coneixin perquè si un altre dia he treballar amb tu, és més fàcil, i tu ja m'has posat cara i jo ja t'he posat cara. i si jo un dia et soluciono una cosa, doncs aquesta cara ja et somriu i al revés, i anem trobant... o a vegades inclús hi ha coses que a nivell d'aquí inclús es poden parlar amb més facilitat. Llavors, això és el que hem anant aconseguint*

Professionals see interest in this, and this is an improvement. Professionals that did not speak between the, who did not know each other... Knowing each other is important, because when they have to work together it's easier, and if you have seen my face and I have seen yours, and if one day I solve you one problem, then this face smiles, and the other way round, and it's easier to speak about things. This is what we've achieved.

[IP09\_2]

*Aquest grup de pacients que tenen moltes màquines a casa, o sigui molta complexitat a casa i que necessiten com és lògic la intervenció de molts especialistes, el cardòleg, el pneumòleg, el no se que (...) Si el porten més de 5 especialistes cagada pastoret. Si prenen més de 6 pastilles risc de mal compliment. Si ell diu: "no sé qui em porta" és un risc.*

This type of patients have many machines at home, very complex, and they need the intervention of many specialists: cardiologists, pneumologist, and many others. (...) If they have more than 5 specialists, things are going to be difficult. If they take more than 6 drugs, there's a risk of low adherence. If the patient says "I don't know who my doctor is", then we have a risk.

[IP01\_2]

*La causa de no aceptación está en torno a un 18%, por parte del cuidador o del paciente. Yo creo que es por desconocimiento, porque muchos pacientes que hemos visto reticentes al salir, que al final, a veces apretando un poco...(…). Al alta dicen: -no sé porque estaba así, ha sido fantástico. Yo creo que es desconocimiento, se piensan que les das la patada y que no va a haber un... Y creo que este porcentaje, si lo probaran o tuvieran más conocimiento, sería mucho menor.*

Non acceptance is around 18%, among patients or caregivers. I think it's because of lack of knowledge, because many patients that at the beginning were reticent to participate, at the end (...). And when they are discharged they say <I don't know why I didn't want to participate, it's been great> I think it's a problem of lack of familiarity with the programme, they think you're going to leave them alone... If they tried, this percentage would be lower.

[IP04\_2]

*El malalt crònic l'hem d'avaluar d'una manera diferent, i avaluem els **5 dominis de la OMS**, des del tema social, el tema sociodemogràfic, el tema comorbiditat, compliment de tractament, dependència, qualitat de vida, accidentalitat, depressió... llavors fem l'avaluació i mirem quins recursos té aquest pacient (...) La mala percepció de la qualitat de vida, el grau d'ansietat i depressió i el número de comorbiditats que té el pacient, i les màquines a casa, màquines o autotècniques (...)... i ser vidu, era el paquet que per nosaltres li diríem més complex*

Chronic patient has to be evaluated in a different way, and we look at the 5 domains of WHO, from social issues to sociodemographic, co-morbidity, adherence to treatment, dependency, quality of life, accidentality, depression... then, we look at the resources they have (...) Bad perception of quality of life, anxiety, depression, the number of co-morbidities, the machines he has at home, the cures needed... and being a widower... this is the most complex of patients.

[IP01\_2]

*Hay una palabra muy bonita que es ser holísticos, y no tratar enfermedades, sino tratar pacientes (...) Si durante el ingreso, si ingresa por una neumonía, y le aparece una anemia, pues estudiamos la anemia. Hacemos interconsultas en diferentes servicios (...).*

There's a very nice word: being holistic, and instead of treating illnesses treating patients (...) If a patient comes because of a pneumonia and then he has an anaemia, then we study the anaemia.

[IP04\_2]

*Perquè jo aspiro es que no sàpiguen molt d'insulina, a lo millor no ho necessitaran mai portar insulina, el que aspiro es que tinguin consciència que tenen una malaltia crònica i que s'han de cuidar, que es una malaltia que moltes vegades no ens avisa, però si ens avisa heu de saber que heu de fer... llavors aquesta*

*consciència que vosaltres heu de manegar la vostra malaltia i heu de tenir eines, i que cadascú segons el moment on estigui haurà d'utilitzar unes o altres*

I don't pretend they know everything about insulin. May be he won't even need it. What I want is that they are aware they have a chronic illness, and that they have to take care of themselves, because sometimes illnesses come without a warning, but when there is a warning they have to know what to do... then, they have to be aware about the illness, and to have tools, and everyone, depending on the moment, will have to use one tool or another...

[IP10-2]

*Ens ha anat bé perquè et donen una seguretat, i quan te'n vas d'aquí dius: seré capaç? i ells et donen la seguretat. Veure cada dia com ho fan, jo ja em veig capaç ara de curar-lo jo, ara que veig que elles em deixen (...) Aquí [a l'hospital] en aquest moment hi ha algun infermer/a que et fa sortir a l'hora de la cura, fa sortir als familiars... jo ho trobo normal, ningú n'ha de fer res, però clar, en el seu cas... el cirurgià vascular és el primer que deia no, no marxis. No marxis, quedate, que has de ver esto, que te lo tienes que llevar a casa. Vull dir que també és bo que les infermeres... tampoc li ensenyaran la ferida a qualsevol però a la persona que viu amb tu... ha de saber com està allò per si un dia se n'ha de fer càrrec.*

It's been fine because they make you feel sure. When you leave the hospital you say "will I be capable?", but they make you feel sure. You see every day how they do it, and then I also feel capable of doing it myself, and they let me do it (..) Here, at the hospital, some nurses don't let you stay when they are doing the cures.. I think it's normal, but the doctor asked me to stay "Don't go, stay, you have to see it, because you have to take him home with you". I mean, it's also good that the nurses ... they don't have to show the wound to anyone, but the person living with him has to know how it is, to take charge

[IP06\_2]

*Ara no [no m'angoixo si es posa malament], perquè estic de seguida molt coberta. Truco al clínic i si no doncs ràpid a urgències, i dintre d'aquest programa (....) D'un any cap aquí que ha entrat aquest sistema, és una tranquil·litat tant per a ell com per a mi*

Now I don't get anxious if he gets worst, because I have an answer very quickly. I call the Clínic and, if it's necessary, we go the emergency services (....) From last year, being in the programme is reassuring for him and for me.

[IP03\_2]

*Aquí depèn molt si el tenim a dintre d'un programa o un altre, això sí que és veritat. Perquè els pacients que els tenim ingressat dins d'hospitalització a domicili, el tipus d'educació que els hi podem fer és una educació de supervivència, perquè el pacient el tenim molts pocs dies. Llavors hi ha diversos nivells d'educació (...) què sàpiga el que té, que es prengui la medicació, que hi sàpiga fer bé les cures i poca cosa més, perquè és el que et dona per sis dies contant que és un pacient que està ingressat i està aguditzat, amb la qual cosa tampoc faràs allò... Amb els altres pacients que si que els tenim durant molt*



*més temps si que pots donar una mica més la volta llavors si que fas més pel cuidador, insisteixes una mica més, i tens més temps i pots fer un programa educatiu molt més ampli.*

It depends on which programme they are in. Patients in the hospital at home programme get a survival education, because we are with the patient a limited number of days. Then, there are different levels (...): knowing what they have, taking the drugs, doing the cures, because that's what you can do in the little time you have and the conditions in which the patient is. With other patients, we work with them during longer periods and you can go more in depth, you give guidelines to the caregiver, you can insist more, and you have more time and can do an educational programme which is more complete.

[IP02\_2]

*Nosaltres pensem que informació i educació terapèutica, experiència del pacient i participació va molt lligat (...). És a dir que l'educació terapèutica sense la participació del pacient és molt complicada. La informació va molt bé que el pacient participi i et digui... l'experiència del pacient és fonamental perquè et digui on hi ha buits de coneixement i on el pacient...on hauríem de treballar aquests punts.*

We think that information and therapeutical education, patient experience and participation are linked (...). Therapeutical education without participation is very complicated. It's useful that the patient participates and tells you what he thinks about the information you are giving.... here patient experience is very important because he can say if there are missing parts, and which parts we should work....

[IP07\_2]

*Són estructures virtuals, tampoc tens una ajuda jurídica ni una dotació, i una mica serien com estructures en xarxa, virtuals, que és molt maca la seva filosofia... i enlloc que cada usuari fos passant per totes les portes s'articulés per tota la xarxa de serveis per centralitzar-se en aquest usuari i no fer-lo patir.*

Those are virtual structures, and you don't have a legal frame, nor a budget, and they are somehow like network structures, virtual, with a very nice philosophy... and instead that every user goes through all the doors the services should be articulated around the patient.

[IP09\_2]

*Les AIS, compten amb la implicació de tots els proveïdors del seu territori, han de dotar-se d'un sistema organitzatiu compartit, l'eix central és el pacient i la garantia de la continuïtat assistencial. En aquest sentit el full de ruta dels professionals del territori passa per treballar per patologies, sobre a base del redisseny de processos consensuat, intranivells i justificat en l'evidència científica, així com l'anàlisi d'altres línies complementaries i circuits.*

AIS consider as key requirement the involvement of all providers in the territory and must be equipped with a shared organizational system in which the focus is the patient and ensuring continuity of care. In this respect the roadmap is addressed to the joint workforce of professionals around pathologies, based

on agreed process redesign and justified around scientific evidence and the analysis of other complementary lines and circuits.

[CONSORCI SANITARI DE BARCELONA. Organització de les Àrees Integrals De Salut- Basis of the organizational System]

*Doncs tens més de 400 professionals que treballen en el territori aquest de 530.000 habitants i que t'agafa aquests 4 districtes. Clar, 400 professionals no es baladí, és una massa crítica important (...) En aquests grups... que és a força... Això sí que... i comences a fer integració de processos o al menys hi poses una llavor. I aquests 400 professionals, doncs uns treballen al Clínic, altres al Sagrat Cor, a l'Hospital Plató, a l'entorn de l'ICS, a l'entorn del CCB, de les EVAs o a l'entorn d'alguna altra gran entitat que hi dona suport, com el SEM...*

Well, you have more than 400 professionals working in this territory that gives service to 530.000 inhabitants, and that takes 4 districts of the city. And 400 professionals is not trivial, it's an important volume (...) In these groups you can work for the integration of processes, or at least you can put a first seed. And those 400 professionals all work in different organizations...

[IP09-2]

*Treball social encara no hem arribat... I serveis socials globals tenim projectes pilots, en parlem molt però allò és un bloc que va per una banda. O sigui, és pitjor encara perquè tens la Conselleria de Benestar Social que és un món que va per una banda, després tens que l'Ajuntament de Barcelona a nivell de ciutat té capacitat de gestió de recursos, que són al final els que més ajuden (teleassistència o àpats calents o bugaderia o un treballadora familiar...) o mil coses, que poden ajudar a aguantar el cas típic que te a veure amb la cronicitat*

We have not reached social work yet... We have global projects, we speak a lot but they go separately. You have the department of Social Welfare that works on one direction, and then the Barcelona Local Council, which manages resources that, at the end, are the most useful: telecare, home meals, cleaning services, family worker... or other things that can help in the typical case of chronicity...

[IP09\_2]

*Nosotros hemos tenido pacientes mujeres, por ejemplo, que eran las que hacían las comidas en casa. Cuidadoras, o que se cuidaban mutuamente personas de 85 años. Claro, viene un señor de 85 años que no ha frito un huevo en la vida, que se ponga a cocinar. Y, al final son ellos los que deciden. Nosotros a día de hoy no podemos obligar a los pacientes. Entonces, nosotros les decimos: -¿quién va a hacer hoy la comida? Señora, usted lleva oxígeno, no se puede acercar a un fuego. Pues si la quiere hacer él, bien, sino se queda en el hospital.*

We've had patients, women, who were the ones cooking at home. Caregivers, or 85 years old couples.. And then, you see a man who is 85 years old, and has never fried an egg.. And finally, they decide,

because we cannot force the patients. We tell them <who is going to cook?, Madam, you wear oxygen, you cannot be near the cook> And then, if he wants to cook, fine, if not, then she stays at the hospital.

[IP04\_2]

*Es una infermera especialitzada de l'hospital que s'estableix a primària amb la funció de dinamitzar no només el que és la consulta de l'endocrí, i de donar resolució a aquells pacients que potser haurien d'estar derivats a l'hospital per fer insulinitzacions més complexes o pacients que estan descompensats (...) doncs en lloc de derivar-lo a l'hospital farem aquí el suport amb la infermera especialitzada juntament amb l'endocrí i després hi ha tota aquesta part d'intentar donar el reforç a la infermera de primària, treballar conjuntament amb aquells pacients que em diguis: tinc difícil maneig, o tinc dubtes, faig una consultoria a la infermera especialitzada, treballem conjuntament o fem l'abordatge d'una insulinització, no sé com manegar-m'ho, per anar fent aquest pacient que si que es de primària, que no hauria d'anar a l'hospital i que fem una abordatge des de la infermera especialitzada però que estarà ubicada a l'atenció primària, i que treballarà conjuntament amb l'equip de primària.*

A specialized nurse from the hospital comes to primary care and gives solution to the patients that should have been derived to the hospital for complex insulinizations (...) and instead of taking that patient to the hospital, we take care of him at primary care, with the support of the specialized nurse and the endocrine. And when we have doubts or we don't know how to do it, we work together with the specialized nurse.

[IP10-2]

*El fas participip de les cures. No tenen la càrrega mes important perquè evidentment sempre s'intenta que el cuidador sigui només un cuidador. El cuidador ha de fer de familiar, no ha de fer d'infermer ni ha de fer de metge, ni ha de fer de res... Llavors està de cuidador i de suport, però la part de la cura i la part gran sempre ha de recaure sobre el personal... no té perquè tenir un pes a sobre que no li toca*

The caregiver is participant in the cure. They don't have the responsibility, because you always try that the caregiver acts only as a caregiver. The caregiver has to act as a family member, not as a nurse or a doctor... The role of the caregiver is giving support, but the big part always falls in the healthcare team...

[IP02\_2]

*Aquest és el paper del gestor de casos, d'intentar posar ordre en aquesta a vegades confusió generades per diferents metges que veuen només una part del malalt. Aleshores aquesta fragmentació és la que d'alguna manera el gestor de casos vindria a resoldre. (...) jo et diria que aquesta és la bondat del gestor de casos... que té aquesta capacitat de donar la continuïtat de seguiment idealment amb poca intensitat però amb freqüència...*

This is the role of the case manager, to put order in the confusion generated by different doctors that are seeing only one part of the patient. This fragmentation is the one solved by the case manager (...) I

would say that the strength of the case manager is giving continuity to the patient, monitoring the patient with low intensity but frequently...

[IP05\_2]

*En principi a l'atenció primària van creure més oportú que estiguessin... és adir, que cada territori tingués la seva infermera d'enllaç. Una mica el canvi de model venia de que hi havia infermeres d'enllaç molt lligades a serveis de l'hospital... una de vascular, una de medecina... i el canvi de model és: no, no, hi haurà una infermera d'enllaç al territori, que tothom es connecti amb ella*

It was decided that it was better that each territory had its own liaison nurse. It was a change of model, because before these nurses were at the hospital, and the new model is locating liaison nurses at the territory

[IP07\_2]

*La infermera d'enllaç (...) és la persona que esta vinculada, que li arriben totes les altes hospitalàries o l'avís que sortirà de l'hospital un pacient que està fràgil, que necessitarà atenció a domicili o que sortirà en unes condicions que duren un temps necessitarà recuperació... o suport de la família, o bé sortirà be aquell pacient i acudirà a nosaltres a la consultoria normal d'infermera de consulta. I la gestora doncs fa de vincle entre aquests pacients que son més fràgils i que fan molts reingressos hospitalaris, i treballa també a nivell de treball social, de l'hospital o nostre i que manega situacions que son mes complexes i que necessiten aquells pacients una atenció mes d'excel·lència per la seva fragilitat.*

The liaison nurse (...) is the person that receives all the discharges from the hospital, or the notice that a frail patient is going to leave from the hospital, and he will need home attention, or that he will need rehabilitation, or family support, or that the patient will come directly to the consultation. And the liaison nurse acts as a link between these frail patients, who have many readmissions at the hospital, and works with the social workers, from the hospital or from primary care, to deal with complex situations.

[IP10\_02]

*Tenía temple para tratar pacientes que están muy graves, entonces, como estos pacientes son menos graves, no dejan de ser pacientes que pueden estar en una sala de medicina interna, o en la sala de neumología. El paciente es el mismo, el problema es el manejo. El manejo es diferente porque están en casa, no van a tener una enfermera a los 5 minutos que les pase algo, y esto se aprende. Y al principio había pacientes que no me atrevía a cogerlos porque no me veía capaz, pero con los 8 años que llevamos, ves pacientes que coges y dice: -pero, ¿cómo los estoy cogiendo si hace 8 años era impensable? Esto te lo da la experiencia.*

I was used to deal with patients with serious affections, and those patients [from the hospital at home program] may not be so serious, they could be in internal medicine or in pneumolgy. The patient is the same, the problem is the situation. The situation is different because they are at home, and they won't

have a nurse 5 minutes after they have a complication, and you have to learn this. At the beginning I didn't dare to take particular patients, and now I think "how am I taking them now, 8 years ago this was out of the question". That's what experience teaches you.

[IP04\_2]

*El programa d'hospitalització a domicili és un programa que depèn exclusivament de l'hospital i que el pacient en lloc d'estar ingressat a l'hospital està a casa, i se li fa visita diària (...) i el CatSalut ens paga un tant per l'alta. Si aquest programa no estigués el malalt estaria en un llit a l'hospital. Aquí vam demostrar resultats molt positius, amb lo qual el pacient que ens el vam emportar a casa comparat amb el que va estar a l'hospital reingressava menys, tenia menys visites a urgències, i el més important, baixava costos. Però el més important també per mi és la perspectiva del pacient era molt bona del servei. Tant del pacient com del cuidador. I el 98% dels pacients i cuidadors van dir: si jo una altra vegada necessito estar ingressat vull estar ingressat amb vosaltres a casa. Aleshores aquests bons resultats ens van portar que al 2006 la direcció de l'hospital va dir: sí, doncs ara per totes les altres patologies*

The Hospital at Home programme depends exclusively from the hospital, and the patient instead of being at the hospital is at home, and is visited in a daily basis (...), and CatSalut pays us for each discharge. Without this programme, the patient would be at the hospital. And we demonstrated very positive results, the patient treated at home had less readmissions, less visits to emergency services, and, more important, less costs. But for me the key factor was that the satisfaction of the patient was very good. Both patient and caregiver. And 98% of patients and caregivers said "if I ever need to go to the hospital, I want to be with you, at home". And these good results drove the management of the hospital to say "ok, now, we will extend the programme to all pathologies".

[IP01\_2]

## 4.12 References

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