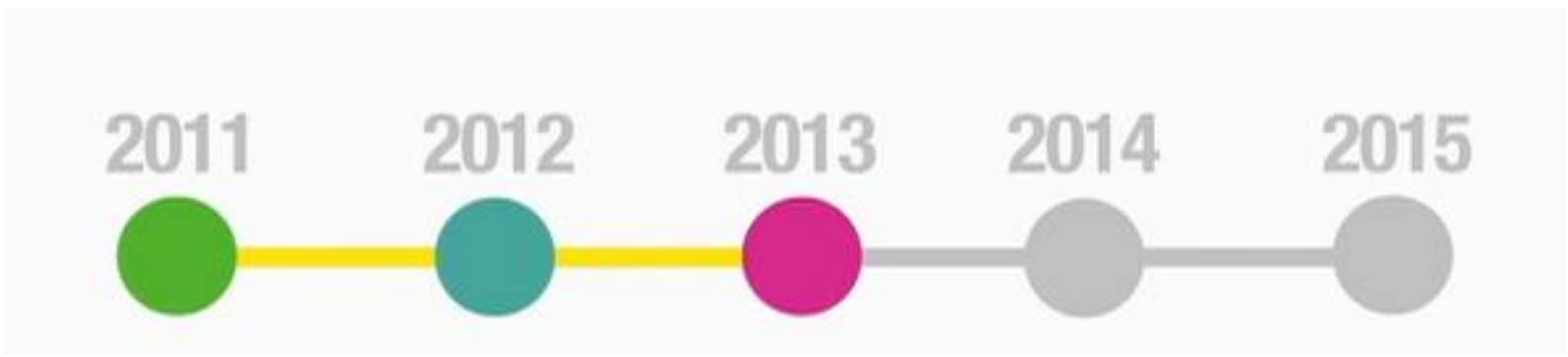

The Catalan Health Care System in a Process of Change

Review of the 2011-2015 Health Plan for Catalonia at the Halfway Point

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Contents

Introduction

We are at the halfway point of the 2011-2015 Health plan Catalan Health Plan. This is a good time to take a look at the process of transforming our health care system, a process that is clearly aimed at where we want to go, with explicit objectives and considerable involvement of the people who work in the Catalan health care system.

We have a general goal for health – increasing the proportion of years we live in good health – that aims to summarize the aspirations of quality of life and health of the Catalan population.

This is a characteristic of this health plan that is strongly focused on action, on ensuring that the changes take place.

The change affects the whole of the system, from primary care to high specialization, and from the role of the citizen and the responsibility of the organizations to interdepartmental policy. The social and health care worlds are strongly linked because people have both social and health-related problems and conditions. The change also involves a new configuration of the care models and advancing toward a comprehensive health care and social model.

Despite the years of budget restraint, with a real reduction in the per-capita budget for health care, we are “collectively investing” in adapting the system to the needs of the population based on clinical knowledge and the commitment of the institutions. This change is taking place thanks to the effort and contributions of many professionals toward improving the care process.

The dynamics of this health plan have had the effect of “precipitating” projects that had previously been begun to be designed, such as the master plans and the service organization plans, and of articulating them with a strategic perspective of the system as a whole, and with clear priorities regarding the areas with the most opportunities for improvement.

In this review halfway through the period, we have focused on those lines of action that are of greater relevance in terms of transforming the model of care (orientation toward chronicity, greater resolution and accessibility, quality in high specialization, focus on people, public health from an interdepartmental perspective) and oriented toward health care objectives. This process of transformation, however, is accompanied by other lines of action that make it possible, facilitate it or, if they are not implemented, make it difficult, as is the case with changes in the system of contracting and paying for services, with patient safety and with quality policies, roll-out of instruments that make it possible to share information - the Catalan shared clinical records - or initiatives that help with clinical decision-making, such as the “Essencial” project. Also of help in this process of transformation is the fact that the citizens, professionals and organizations have been provided with the information systems in a necessary exercise of transparency that stimulates the improvement of processes and results, as is the case of the Results Centre.

The challenge of the proposed change is a difficult one. In many cases, it involves collaboration between multiple actors, changes in professional roles, and restructuring of organizations, but it is our “route” for continuing to have a good health care system.

Technology and the new forms of communication allow us today to develop collaboration and leadership strategies that would not have been effective before, even though we have recognized this necessity for a long time.

But it is the people - professionals and citizens - and the institutions that make the changes possible. The health plan has become the real strategic plan for improving health and quality of life in the population and for guiding the process of transformation of our health care system. It is the shared road map.

Throughout these two-and-a-bit years of the 2011-2015 health plan, many professionals have been involved in both the design of the actions and in applying the processes in routine practice, at all levels of care. In the two health-plan conferences, held in Sitges at the end of each year, the professionals have shown the results of their improvement projects, shared the innovative aspects with everyone else, and exposed new ways of working to achieve better care of the population.

Without the effort of these professionals and without the collaboration of a responsible and demanding public, it would not be possible to take the route we have decided on.

1. Executive summary

The Catalan health care system is in a process of transformation, guided by the 2011-2015 Catalan Health Plan, with a defined horizon and a clear orientation toward action and with explicit objectives and strong involvement by the people who work in it.

The change affects the whole of the system, from primary care and high specialization, the role of the citizen and the responsibility of the organizations to interdepartmental policy.

This review at the halfway point of the of the 2011-2015 health plan is based on the orientation of the health care objectives and focuses on those lines of action that are of greater significance in terms of transforming the model of care (orientation toward chronicity, greater resolution and accessibility, quality in high specialization, focus on people, public health from an interdepartmental perspective).

It also indicates the key elements for implementing the projects, often determined by other lines of action of the health plan, which are more instrumental and which accompany the process (system of contracting and paying for services, patient safety and quality policies, instruments for sharing information, recommendations to help in making clinical decisions, comparison of results, etc.).

Throughout these two-and-a-bit years of the 2011-2015 health plan, many professionals have been involved in both the design of the actions and in applying the processes in routine practice. Today, the health plan affects all levels of care, through its 9 lines of action and the 32 projects for change, and the results must be viewed in the population as a whole.

The objectives of health and quality of life

- The formulation of quantifiable and evaluable objectives and health and reduction of risk continues to be one of the essential characteristics of the 2011-2015 Catalan Health Plan
- This health plan is the first to explicitly formulate the commitment to improving the quality of life of the population, with the goal of increasing life expectancy in good health by 5% by 2020; i.e., increasing the proportion of life that is lived with the perception of good health.
- Of the 27 objectives of the health plan, 20 show a favorable initial trend.
- The challenge of being able to follow up annually the indicators associated with the objectives of the health plan is proving possible.
- The main macro-indicators in health place Catalonia in a relatively good position with regard to the rest of Europe.
- Thanks to this procedure of planning based on evaluable health objectives, we have ever more examples that show the effectiveness of the interventions carried out.

A system more oriented toward chronic patients

- Implementation has been completed throughout Catalonia of the care routes of the 4 priority diseases: chronic obstructive pulmonary disease (COPD), type 2 diabetes mellitus (DM2), depression and congestive heart failure (CHF).
- The drug-therapy harmonization process for these diseases has been carried out. Two of these processes (CHF and DM2) have been published.
- Regional programs of health promotion, protection and prevention have been implemented in a coordinated fashion and with regional objectives shared between primary care and public health, and 5 areas have been prioritized: smoking, physical activity and healthy eating, alcohol consumption, vaccinations and mother-and-child health.
- More than 100,000 people have gone from a sedentary lifestyle to healthy levels of activity.
- The Catalan Expert Patient Program has achieved 3157 participating patients and 231 expert patients. A total of 212 primary-care teams and 3 hospitals are taking part. There is a program for 8 diseases and 5 more are being developed.
- A group education model is being prepared, which aims to certify this activity and which must establish key aspects that ensure its relevance, efficiency and feasibility.
- The virtual care model has been designed to promote the active and responsible relationship of people with the health care system.
- Marking of people with complex chronic patient (CCP) conditions or patients in the advanced chronicity care model (ACCM) in the Catalan shared clinical records (HCCC) has been implemented. A total of 63,000 patients have already been registered.
- The shared individualized intervention plan has been implemented in these patients; it is included in the HCCC HCCC and is accessible to all care units. It includes the plan for an approach to care shared with patients and professionals that is useful for ensuring continuity of care in a 24/7 model.
- Stratification of the population by morbidity, carried out by CatSalut and included in the HCCC HCCC . Providers have been given access to the stratified database of their population, with information on morbidity groups and risk level.
- Implementation of subacute units accessible from primary care throughout Catalonia.
- Extension of the care model for people who live in residential care centers, with access to the primary care information system and the HCCC HCCC.
- Implementation of a shared long-term and residential care model in 8 regions of Catalonia. The results will be analyzed by AQuAS and a service model will be designed that will be extended next year to the rest of Catalonia.
- A model has been designed for the review, conciliation and improvement of the compliment for patients in a situation of complexity, with a training program that will soon be made available to the professionals.
- Terminology consensus has been reached regarding chronicity - a task that was carried out by the Program for the Prevention and Care of Chronicity and the Catalan Language Terminology Center, TERMCAT (publication of the online TERMCAT dictionary, *Terminologia of Chronicity*).

An more integrated and resolutive system, from basic to territorial level

- Promotion of reorganization of processes with the following strategic objectives: a) increasing the resolution capacity of primary care; b) improving the accessibility and efficiency of specialist care; and c) ensuring continuity of care through integration of care and networking.
- Development of regional agreements between care teams with shared objectives, agreed organization of the care process, consolidated relationship routes and regional management elements, based on clinical leadership.
- Projects focusing on specific priority areas: more than 50% of the regions have begun implementing the collaborative care models in musculoskeletal diseases, ophthalmology and mental health -three of the most common areas of relations between primary care and specialist care.
- Electronic prescription in 100% of primary care teams and in the process of being expanded to hospitals (97% of hospitals) and mental health services (35%).
- Reorganization of emergency care to provide an adequate response to the different types of demands for immediate care. Reduction of 9% in the use of hospital emergency services in the past five years. Uniform triage model implemented in all hospital emergency departments. Medical emergency system with 92% of vital risk situations attended in under 20 minutes. CatSalut Respon 061 telephone response service with more than 45% of demands resolved with information and health advice.
- Regional organization of the services portfolio by level of complexity in care of trauma patients, pediatric surgery and vascular surgery.
- Definition of the portfolio of public health services and development of spaces for interaction with the care services with a focus on community health, with regional experiences. Inclusion of health promotion and disease prevention objectives in the contacts between CatSalut and the primary care teams.
- Agreement with pharmacist's associations to incorporate community pharmacy services jointly with CatSalut, with provision of care services and support for self-healing (early detection of bowel cancer, rapid test for the human immunodeficiency virus (HIV) and, in its initial stages, a personalized medication dosing system for complex chronic patients.

A system for better quality and equity in high specialization

- Introduction in the planning stage of the concept of high specialization, which covers a set of diverse and heterogeneous care services, to provide care in rare diseases that have some characteristics in common: complexity, concentration, expertise and cost.
- Development of actions to provide highly specialized care that ensures quality, multidisciplinary, complex care with better results.
- Identification of the need to establish limits to the expansion of tertiary services within the system. The relationship between the volume of cases seen and quality is a gold-standard element in the scientific literature.
- Roll-out in Catalonia of Directive 011/24/European Union on the application of patients' rights in cross-border health care. Establishment of a framework for cooperation between member states. One particular area of cooperation is the development of European reference-standard networks.
- CatSalut defines the high-specialization units (HSU) and provides references regarding general criteria for quality care by these units (functions, general requirements and requirements of the centers where they are to be located,

elements of the evaluation, research and innovation model, and contracting with CatSalut.

- Reorganization of oncologic care for digestive tumors, tumors of the lung, of the central nervous system, sarcomas, blood tumors, pediatric tumors, etc. In most cases there are between 2 and 8 reference centers.
- Implementation of the acute myocardial infarction (AMI), complex stroke and polytrauma Patient (PTP) codes, with a total of more than 11,000 codes per year combined.
- Definition of the reference centers for minority metabolic, neuromuscular, cognitive-behavioral and respiratory diseases. There are between 2 and 6 centers.
- Concentration of treatment of some 500 cases of congenital heart disease in 3 centers.
- Identification of the reference centers in complex vascular arterial surgery of the aorta and carotid artery.
- Organization of refractory-epilepsia surgery in 2 centers, and motion-disorder surgery, also in 2 centers.
- Unification of the 3 on-call transplant services into one.
- Evaluation of 25 high-complexity treatments.
- Shared-risk agreements as an instrument for improving the efficiency of public funding of drugs (incorporation of result-based drug-therapy innovation) and highly complex, high-cost health care technology.

A system more focused on people

- Action model oriented toward a greater focus on citizens, based on achieving three basic elements: proactivity of CatSalut as a public insurance provider, transparency and guarantees in the commitments established, and reinforcement of citizen responsibility.
- Positive population-based discrimination programs: implementation of the individual health card (IHC) in Braille format for all blind people who request it and the “Cuida’m” (take care of me) IHC for people with dementia.
- Via the “Guide to the use of the public health care services”, CatSalut provides information on its website regarding the general way in which the services of the health care system work and gives guidance on how to access them correctly and responsibly.
- Positioning of the 061 CatSalut Respon service as a single telephone number for citizens to communicate with CatSalut, with telephone and online assistance 24 hours a day, 365 days a year.
- A database has been built that includes the morbidity collected in the different health care information systems, in order to be able to correctly classify patients in different risk groups based on the state of their health and thereby be able to determine specific preventive policies and policies for adapting care so that they help to create a more efficient health care system that is better suited to the different needs of the population.
- The satisfaction-survey plan for insurees of CatSalut (PLAENSA) provides rigorous information on the satisfaction and quality of service received by people who have been attended in the different lines of service, with periodic results. The synthetic satisfaction scores range between 7.6 and 8.5, depending on the lines of service and the different editions. The loyalty scores range from 81.4% to 91.9%.
- The mission of the Results Center is to measure, evaluate and disseminate the results attained by the different actors who make up the Catalan public health care

system. With a focus on transparency and accountability toward the citizens, it nominally presents the results of the different centers in patient care, teaching and research, including results on perceived quality.

- The Catalan Patient Advisory Board was established in 2012 as an advisory body representing patients' associations before the Catalan Ministry of Health.
- The Personal Health Channel is an online, personal and nontransferable consultation space that provides personal health information (medication schedule, vaccinations, diagnoses, clinical reports, etc.), which can be used safely and confidentially and which also allows certain administrative procedures to be carried out online.

Health in all policies: interdepartmental commitment

- Most of the causes of both health and disease lie outside the health care system, require an inter-sector approach and have to do with policies carried out in departments other than the Catalan Ministry of Health.
- Law 18 of 22 October 2009, on public health, establishes that the interdepartmental public health plan (PINSAP), coordinated with the health plan, is the basic tool for developing public health actions in Catalonia, so that its proposals are binding for the Catalan government.
- The objectives of PINSAP are a) to effectively include health as one of the central lines of government policy (health in all policies); b) involve all government departments so that they can capitalize on their positive influence on health; and c) improve coordination and promote synergies that lead to increased effectiveness, efficiency and equality of the inter-sector policies on health and welfare.
- The Interdepartmental Health Committee is responsible for analyzing the activities and services of each department that have a major impact on the health of the population, as well as joint activities between departments.
- It is not just an interdepartmental task but also an inter-sector one, in which all the authorities, particularly the local authorities, and all sectors of society are involved.
- In this context, new inter-sector activities are being designed on health protection and promotion, particularly those relating to living conditions and the reduction of health inequality.

Key elements for implementing the different projects for transforming the care model

1. Adaptation of the CatSalut contracting and payment model to the providers, so that it generates integrated care and promotes collaborative work in the region between the institutions and professionals of the different patient-care areas.
2. Consolidation of interdepartmental relations to act on factors that determine health, from the perspective of public health in all policies, and evolution toward a comprehensive health care and social model, from the perspective of care of people.
3. Adaptation of planning (anticipatory) in a context of very rapid changes in knowledge and technology.
4. Clinical leadership to drive changes in the care processes and involvement of the management of the institutions to implement and support the projects.
5. Regional leadership of CatSalut to transfer the strategic orientations and establish objectives in terms of results in the shared responsibility for the health of a population, and also to facilitate operative aspects of managing change (interaction between units, regional agreements, strategic alliances).

6. Roll-out, with their maximum potential, of the systems that facilitate sharing and communicating clinical information and information in support of clinical management.
7. Aggregate, population-based information in all areas of care in order to be able to evaluate the results and impact of the processes of transformation of the model and benefit from the stimulating effects of the improved quality in the comparison between teams.
8. Use of new technology in communicating with the citizens, which must facilitate access to more information and knowledge, and which must also allow citizens more autonomy and responsibility.
9. Creation of a communicative environment that facilitates the transmission of messages that favor the sustainability of the system with guaranteed quality of care and inalienable equality.
10. Reinforcement of the participation dynamics of citizens, patients and professionals in order to include their vision of the realities of the health care system in decision-making at the different levels of responsibility.

2. The objectives of health and quality of life

The objectives of health and quality of life on the 2020 horizon

In the 2011-2015 planning period, **27 health objectives** were established relating to respective priorities established to tackle health problems that have a major impact on the health of the people who live in Catalonia. These objectives are the real horizon and synthesize the expected result of all the actions of the 2011-2015 Health Plan for Catalonia.

The objectives were chosen because they relate to health problems that affect many people, because they have severe consequences, because there is evidence of interventions to tackle them and because it is considered that the human and material resources needed to execute them are in place. Furthermore, they affect two areas of intervention that have been considered priorities from a strategic point of view: chronic diseases and patient safety.

Table 2.1 shows the 27 health objectives. These objectives have been formulated by taking as a reference framework the guidelines of the Catalan Ministry of Health, the guidelines of the World Health Organization (WHO) for the European Region, and the recommendations of national and international experts.

There are two highly relevant aspects relating to the evaluation of the objectives of the health plan. The first is that all the objectives are evaluable using the sources of information available, except for the incidence of cancer, for which we only have data from regional records. The second is that the indicator can be measured annually, so that it can be followed up, thereby facilitating monitoring and the establishing of corrective measures if required. This does not mean that all the information is available at the same time every year. We have the annual information, but while some indicators can be provided six months after analyzing the source, others require 18 months of work in order to prepare them. Thus, in the case of smoking, we can provide the prevalence data from the year prior to the evaluation; in the case of mortality, we can only provide the information from two years previously because the process of collecting and processing the information takes a year and a half.

At present, it is difficult to determine how these indicators are evolving, given that the time elapsed since their formulation does not allow us to determine a clear trend. Nevertheless, the table shows the initial level and the current situation. Determining the evolution of the indicators, even for such short periods, is essential for establishing corrective measures in the event of unexpected situations.

The document Marcant fites. Seguiment anual dels objectius del Pla de salut (Setting Targets. Annual monitoring of the objectives of the health plan), drawn up by the Catalan Ministry of Health, established the baseline reference points of the 27 objectives, which were used to calculate the values for 2020 or 2015, depending on the type of objective (Table 2.1). Of the objectives of the health plan, 19 are showing a favorable evolution based on expectations, whereas in the remaining 8, if the current situation persists, additional measures will be required.

Table 2.1. Health and Risk Reduction Objectives of the 2011-2015 Health Plan for Catalonia.

No.	Objective *Indicator* From now until 2020 we need to...		Initial Reference Point	2012	Objective 2020
1	Increase by 5% the proportion of life expectancy lived in good health in men and women *Quotient of life expectancy in good health to life expectancy by sex (%)*	Men	82.3	85.9	86.4
		Women	74.1	76.8	77.8
		Total	78.0	81.1	81.9
2	Reduce by 20% the mortality rate for vascular disease *Mortality rate per 100,000 inhab., standardized by age, for vascular disease*	Men	202.4	189.6	161.9
		Women	124.4	115.5	99.5
		Total	158.6	147.7	126.8
3	Reduce by 10% the mortality rate for cancer *Mortality rate per 100,000 inhab., standardized by age, for cancer*	Men	275.3	270.1	247.8
		Women	125.6	123.2	113.0
		Total	189.5	186.3	170.6
4	Increase by 15% the 5-year survival rate for cancer *5-year relative survival for cancer (%)*	Men	46.0	50.3	52.9
		Women	56.4	60.9	64.9
		Total	50.2	*NA*	57.7
5	Reduce by 10% the mortality rate for respiratory disease *Mortality rate per 100,000 inhab., standardized by age, for respiratory disease*	Men	87.6	86.6	78.8
		Women	31.2	32.1	28.1
		Total	53.3	53.5	48.0
6	Reduce by 10% the mortality rate for mental illness *Mortality rate per 100,000 inhab., standardized by age, for mental illness*	Men	24.7	24.0	22.2
		Women	24.0	23.3	21.6
		Total	24.6	24.0	22.1
7	Reduce by 15% the mortality rate for ischemic heart disease *Mortality rate per 100,000 inhab., standardized by age, for ischemic heart disease*	Men	71.3	63.5	60.6
		Women	26.8	24.2	22.8
		Total	45.8	40.7	38.9
8	Reduce by 15% the mortality rate for stroke *Mortality rate per 100,000 inhab., standardized by age, for cerebrovascular disease*	Men	41.6	40.8	35.3
		Women	30.6	29.5	26.0
		Total	35.4	34.3	30.1
9	Reduce by 10% the mortality rate for breast cancer *Mortality rate per 100,000 inhab., standardized by age, for malignant breast cancer*	Men	0.3	0.3	0.3
		Women	21.4	19.5	19.2
		Total	11.9	10.9	10.7
10	Reduce by 5% the mortality rate for bowel cancer *Mortality rate per 100,000 inhab., standardized by age, for malignant bowel cancer*	Men	36.5	36.5	34.7
		Women	17.1	17.3	16.2
		Total	25.3	25.4	24.1
11	Keep the mortality rate for suicide below current levels *Mortality rate per 100,000 inhab., standardized by age, for suicide and self-harming*	Men	8.5	8.9	8.5
		Women	2.4	2.9	< 2.4
		Total	5.3	5.7	< 5.3

12	Reduce by 10% the incidence of hip fractures in people aged 65 years and over *Rate of hospital admissions per 10,000 inhab., standardized by age, due to hip fractures in people aged 65 years and over*	Men	48.7	43.9	43.9
		Women	83.2	79.8	74.9
		Total	70.5	66.2	63.4
13	Reduce by 10% amputations in people with diabetes aged between 45 and 74 years *Rate of amputations per 10,000 inhab. in people with diabetes aged between 45 and 74 years*	Men	39.5	43.3	35.6
		Women	10.8	11.0	9.7
		Total	27.4	29.0	24.7
14	Reduce the prevalence of smoking to below 28% *Prevalence of smoking in the population aged 15 years and over (%)*	Men	35.8	34.2	*NP*
		Women	23.4	22.9	*NP*
		Total	29.5	28.5	< 28.0
15	Reduce the prevalence of sedentary behavior to below 2010 levels *Prevalence of sedentary behavior in the population aged between 18 and 74 years (%)*	Men	15.4	16.4	< 15.5
		Women	18.3	19.2	< 18.7
		Total	16.8	17.8	< 17.1
16	Increase by 10% the proportion of adults who follow recommendations on healthy physical activity per week *Prevalence of healthy physical activity (moderate and high IPAQ) in the population aged between 15 and 69 years (%)*	Men	74.1	72.1	81.5
		Women	69.0	68.9	75.9
		Total	71.6	70.5	78.8
17	Reduce the prevalence of excess weight (overweight or obesity) in the population to below 2010 levels *Prevalence of declared excess weight in the population aged between 18 and 74 years (%)*	Men	57.4	57.7	< 56.6
		Women	41.5	40.1	< 38.2
		Total	49.5	49.0	< 47.4
18	Increase by 15% the proportion of hypertensive patients attended in primary care with blood pressure (BP) <140/90 mm Hg *Percentage of hypertensive patients attended in primary care with BP <140/90 mm Hg (%)*	Total	63.3	68.3	72.8
19	Increase by 15% the proportion of patients aged between 35 and 74 years attended in primary care with blood cholesterol levels > 200 mg/dL with assessed cardiovascular risk *Percentage of patients aged between 35 and 74 years attended in primary care with blood cholesterol levels > 200 mg/dL with assessed cardiovascular risk (%)*	Total	84.0	88.3	96.6
20	Reduce by 15% the proportion of readmissions at 30 days of patients with diabetes *Percentage of patients with diabetes readmitted at 30 days (%)*	Total	5.5	5.9	4.7
21	Reduce by 15% the proportion of readmissions at 30 days in patients with chronic obstructive pulmonary disease (COPD) *Percentage of patients with COPD readmitted at 30 days (%)*	Total	17.1	18.1	14.5
22	Reduce by 15% the proportion of readmissions at 30 days in patients with congestive heart failure (CHF) *Percentage of patients with CHF readmitted at 30 days (%)*	Total	15.5	15.4	13.2
23	Reduce the mean overall prevalence of nosocomial infection to below 7% *Overall prevalence of nosocomial infection (%)*	Total	7.0	7.5	< 7.0
24	Reduce the rate of surgical infection in knee replacements to below 3.5% *Overall incidence of surgical site infection (SSI) in*	Total	3.0	2.5	< 3.5

	programmed knee-replacement surgery (%)				
25	Reduce the rate of surgical infection in hip replacements to below 3% *Overall incidence of SSI in programmed hip-replacement surgery (%)*	Total	2.8	2.5	< 3.0
26	Reduce the rate of surgical infection in bowel surgery to below 21% *Overall incidence of SSI in programmed bowel surgery (%)*	Total	20.6	19.1	< 21.0
27	Reduce the mean incidence of mechanical ventilation-associated pneumonia to below 12 episodes per 1000 days of ventilation *Density of incidence of mechanical ventilation-associated pneumonia*	Total	5.6	5.0	< 12

Source: *Setting Targets, 2013*. Catalan Ministry of Health.

The main objective set by the health plan is to **increase the proportion of life expectancy lived with a good perception of health**. All the health plans for Catalonia have had this purpose, but it was formally and explicitly expressed in this 2011-2015 health plan. Life expectancy in good health is a composite indicator that includes the duration of life and the quality of life with which it is lived. Thus, it includes life expectancy calculated using mortality, and the perception of health calculated using the Catalan Health Care Survey (CHCS). The objective was formulated in terms of the proportion of life lived in good health and, although it is a very difficult objective to achieve because life expectancy is increasing, it is important to take it into account because it points the way to prioritizing the more qualitative elements of life. Table 2.2 shows the trend of life expectancy in good health in Catalonia in recent years.

Table 2.2. Proportion of life expectancy lived in good health in Catalonia for different years and the objective for 2020

	1994 (%)	2000 (%)	2011 (%)	Objective 2020 (%)
Men	80.0	79.7	82.3	86.4
Women	70.8	72.9	74.1	77.8
Total	75.0	76.1	78.0	81.9

Source: *Setting Targets, 2013*. Catalan Ministry of Health.

The EU-15 countries show similar values for life expectancy (LE), disparities in life expectancy in good health (LEGH) and maintain differences by sex. Catalonia is in a good position in men and an intermediate position in women (Figure 2.1).

Evaluation of the objectives of the health plan: a consolidated trajectory

When the objectives of the health plan were formulated, efforts were made to set measurable levels to be achieved, a clear time limit and an indicator that would allow the related objective to be measured. Thanks to this, in each of the six periods of planning by health objectives by means of the Health Plan for Catalonia (started in 1991), it has been **possible to give account of the formulated objectives** in the previous period and evaluate the impact that the activities (operative objectives) have had on their achievement.

The sources of information are key to being able to evaluate and to do so on a regular basis. In this regard, many important changes have been made to the **Catalan Health Care Survey** (CHCS), which has gone from being a cross-sectional survey carried out in 1994, 2002 and 2006, to a continuous survey (CHCSc) from the second half of 2010. Thus, each year it is possible to obtain estimators of the CHCSc indicators for Catalonia as a whole and, by accumulating different years, estimators for the smaller regions. This is a very important element because the survey is the source of information most readily available, apart from the information on the perception and knowledge of people's own health, and also contains information on the socioeconomic characteristics of the respondents. Thus, using the CHCSc, it is possible to link the information on health with information on social status. This is not possible with other systematic sources of information used in health care planning.

Every 10 years, an overall evaluation is carried out of the health objectives and risk reduction. The results of the evaluations of the last two decades (Table 2.3) show that they are achieved fully or partially (at least 50% of the expected change has been achieved) in approximately two-thirds of the objectives.

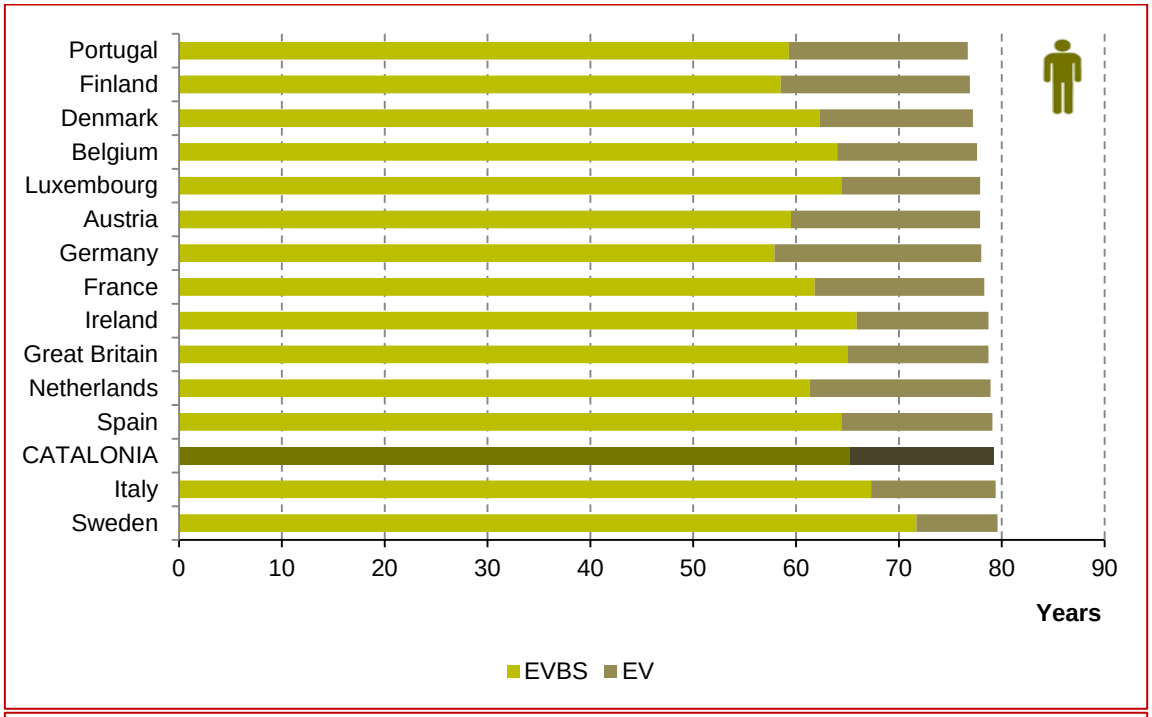
Table 2.3. Result of the evaluation of the health objectives and risk reduction of the health plans for Catalonia for 2000 and 2010

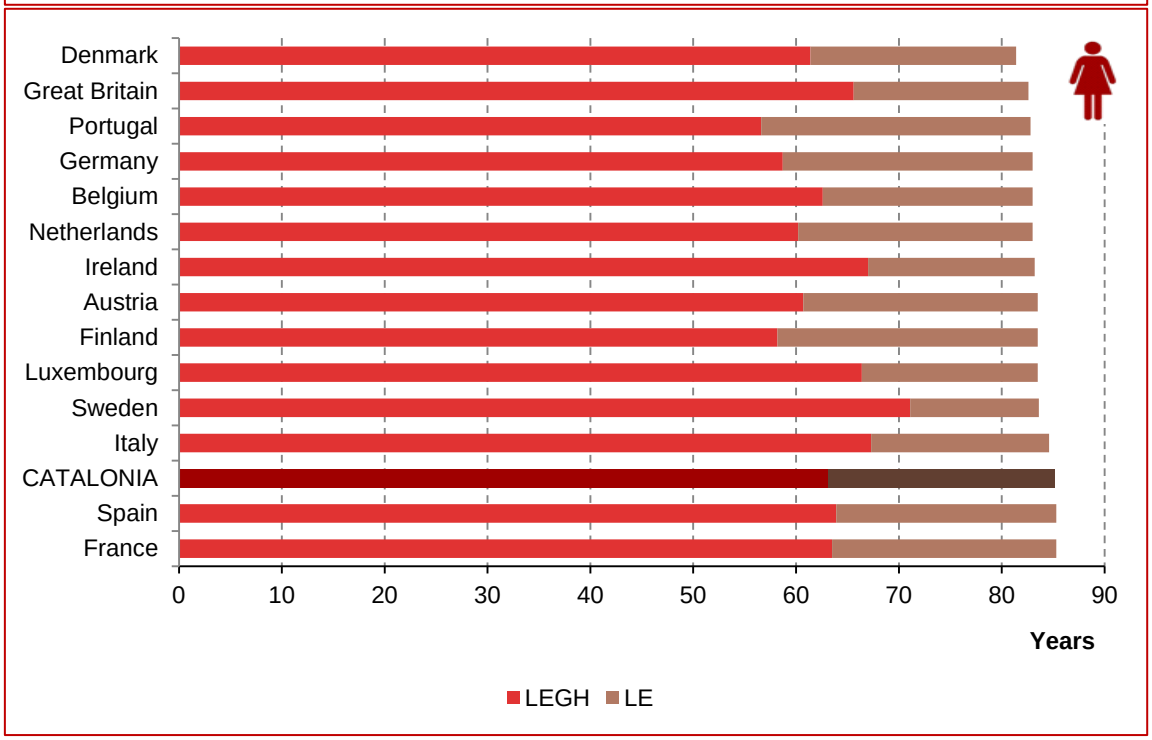
Level of Objective Achieved	2000	2010
Fully achieved	69 (68.3%)	94 (53.7%)
Partially achieved (>50%)	8 (7.9%)	24 (13.7%)
Not achieved	24 (23.8%)	57 (32.6%)
Total objectives evaluated	101	175

Source: Health Plan for Catalonia. Evaluation of health objectives and risk reduction for 2010.

Although it is not easy to find similar evaluation models in neighboring countries, it is possible to compare ourselves in the case of certain indicators and position ourselves in the context of Europe, as can be seen in Figures 2.1 to 2.3.

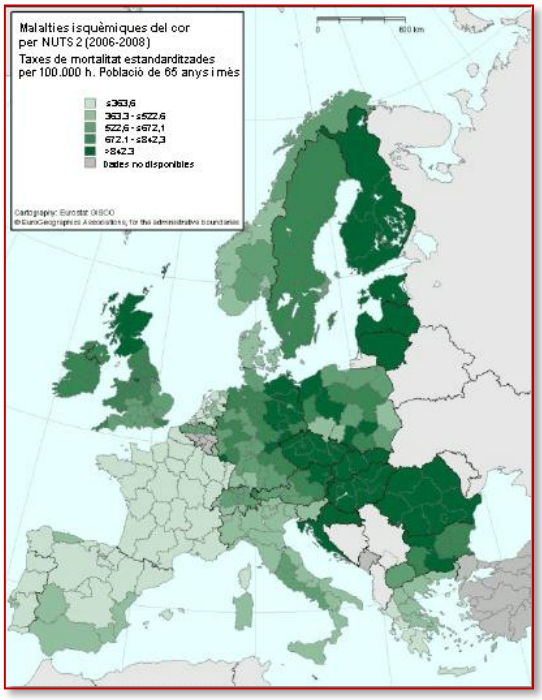
Figure 2.1. Life expectancy (LE) and life expectancy in good health (LEGH) by sex and EU-14 country (2009) and in Catalonia (2010-2011)





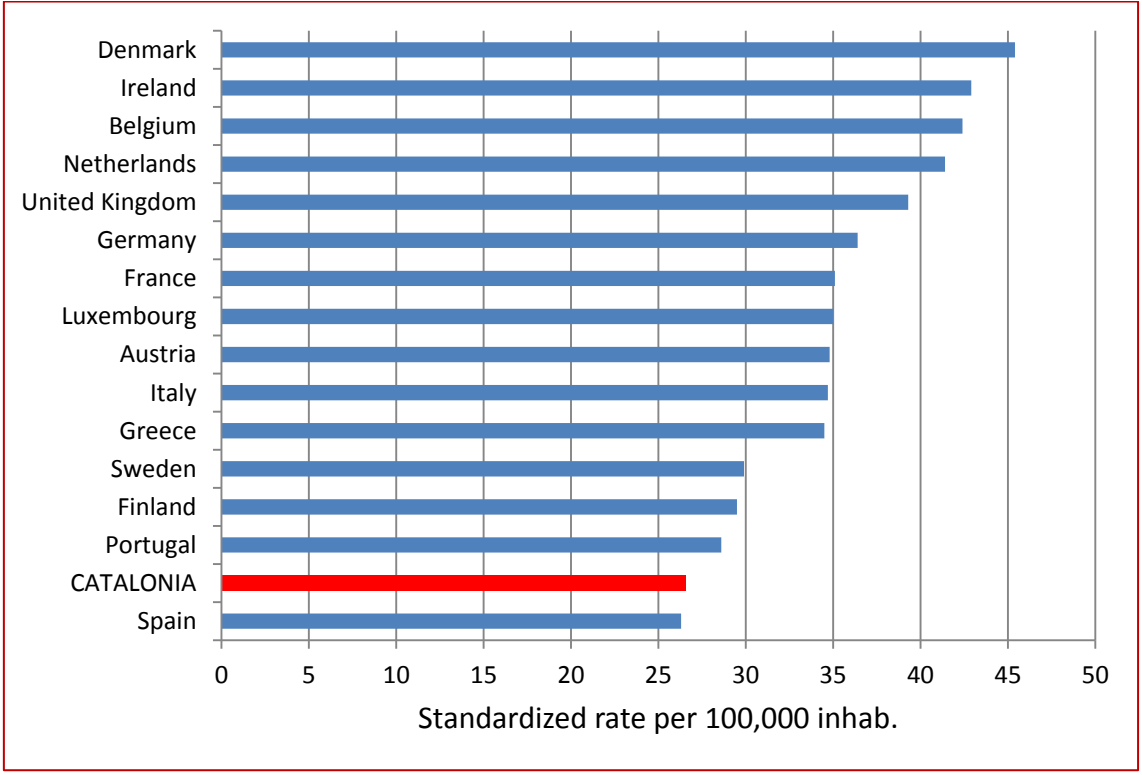
Source: OECD, 2008.

Figure 2.2. Standardized mortality rate for ischemic heart disease in the population aged 65 years and over. NUTS 2, 2006-2008



Source: Eurostat, 2006-2008.

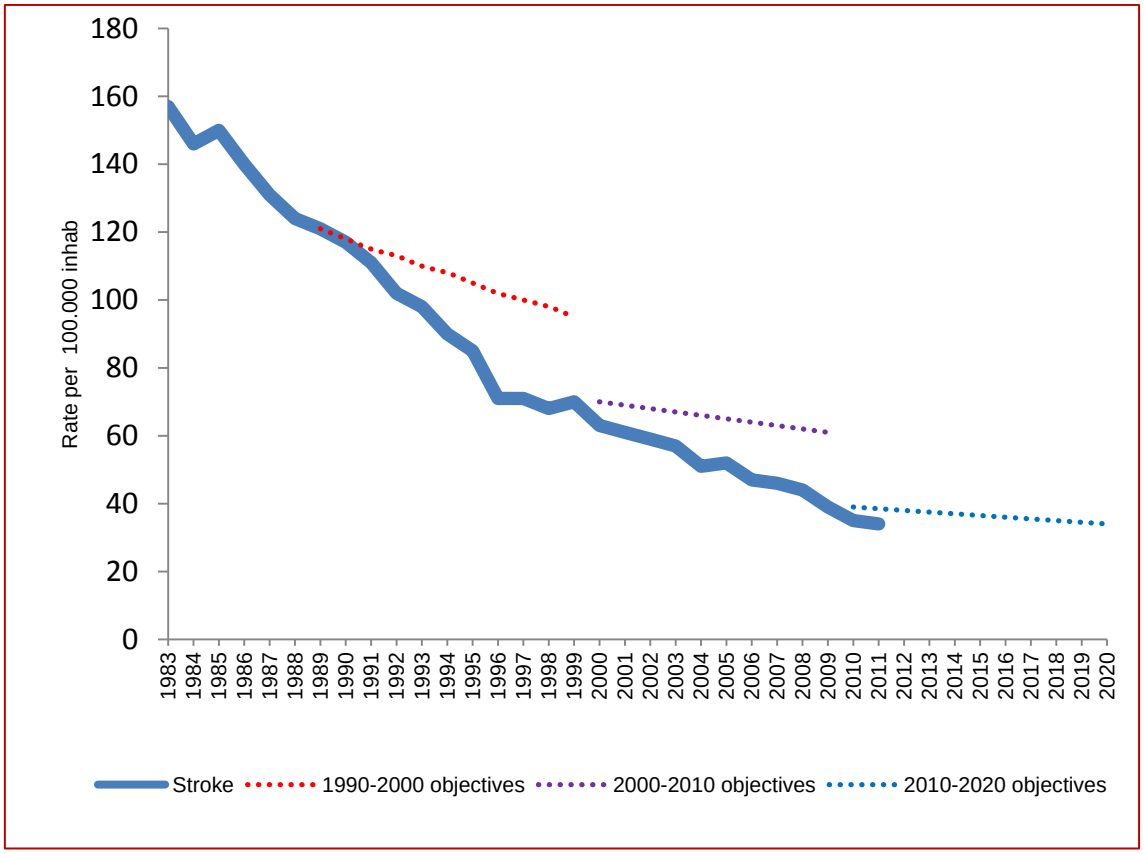
Figure 2.3. Standardized mortality rate for breast cancer in women by EU-15 country, 2007-2009



Source: Eurostat.

What is expected from the evaluation of a standard objective is what is shown in Figure 2.4. We can see the evolution of mortality due to stroke between 1983 and 2011. In finer detail, we can see the estimations made for each planning period and note should be taken of some points. First, we can highlight the trend in the first years, as it shows a clear reduction, and second, in past planning periods the reduction achieved was always greater than expected. This may indicate that the bar was set low when formulating the objectives (in this specific case, the recommendations of the WHO were followed) or that the interventions carried out were more effective than initially foreseen.

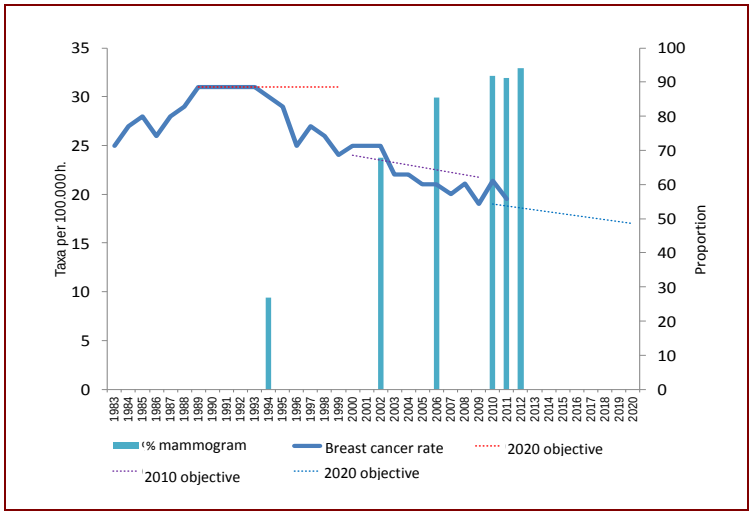
Figure 2.4. Evolution of mortality due to stroke and objectives of the health plan. Catalonia, 1983-2020



Source: Catalan mortality register. Health Plan for Catalonia.

A similar situation can be seen in Figure 2.5, which also shows a rather favorable situation in mortality due to breast cancer. In this case the objective established for 2010 was to maintain the rate at that time, given the rising trend of mortality in the previous years. From the mid-1990s, there is a markedly favorable trend that is thought to be largely due to the generalization and improvement of the community mammogram screening program implemented in each of the CatSalut health care regions.

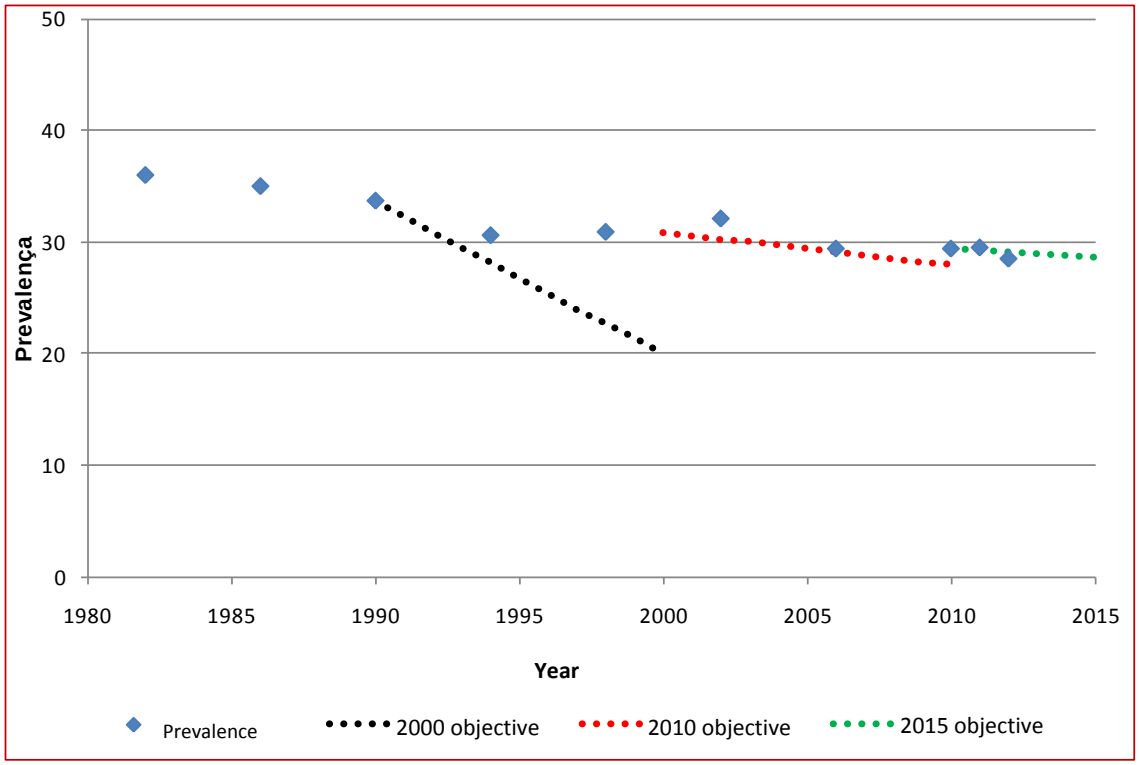
Figure 2.5. Evolution of mortality due to breast cancer, of preventive mammograms and objectives of the health plan. Catalonia, 1983-2020



Source: Catalan mortality register. Catalan health survey. Health Plan for Catalonia.

The evolution of the prevalence of smoking in the population aged 15 years and over (Figure 2.6) shows us a different situation. The objective established in 1991 for the year 2000 (20% of the smoking population), following the parameters already set out by the WHO, turned out to be overly ambitious, despite some progress achieved particularly in young people and men. In 2001, the objective was reformulated in a more realistic manner (28% of the smoking population) and, although this goal was not achieved in 2010, the reduction in the prevalence of smoking in Catalonia was considerable in this period and the objective set for 2015 is achievable (<28% of the smoking population), as we are already very close (2012: 28.5%).

Figure 2.6. Evolution of smoking and objectives of the health plan. Catalonia, 1982-2015

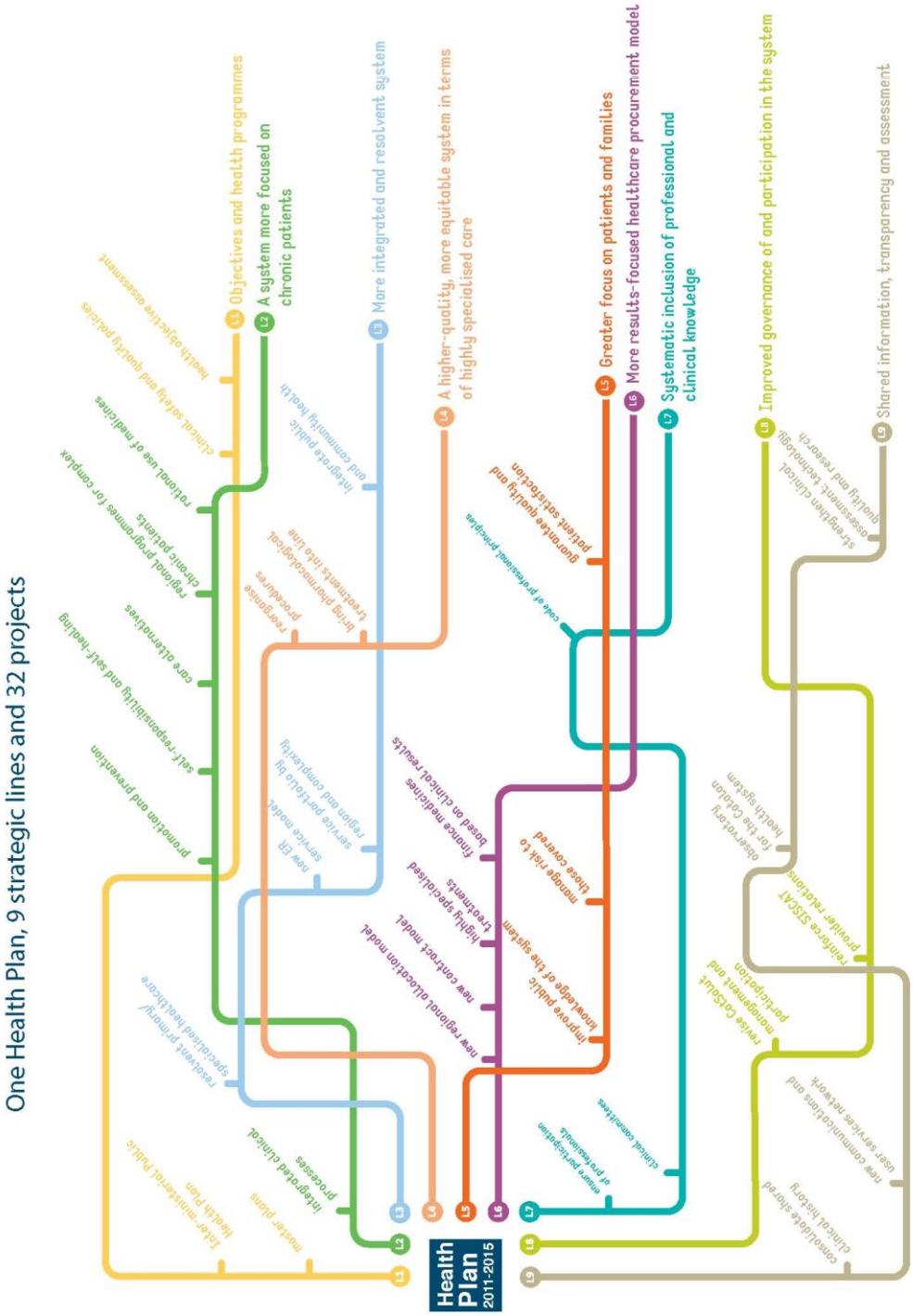


Source: Smoking prevention program. Catalan health care survey.

Monitoring of operative objectives

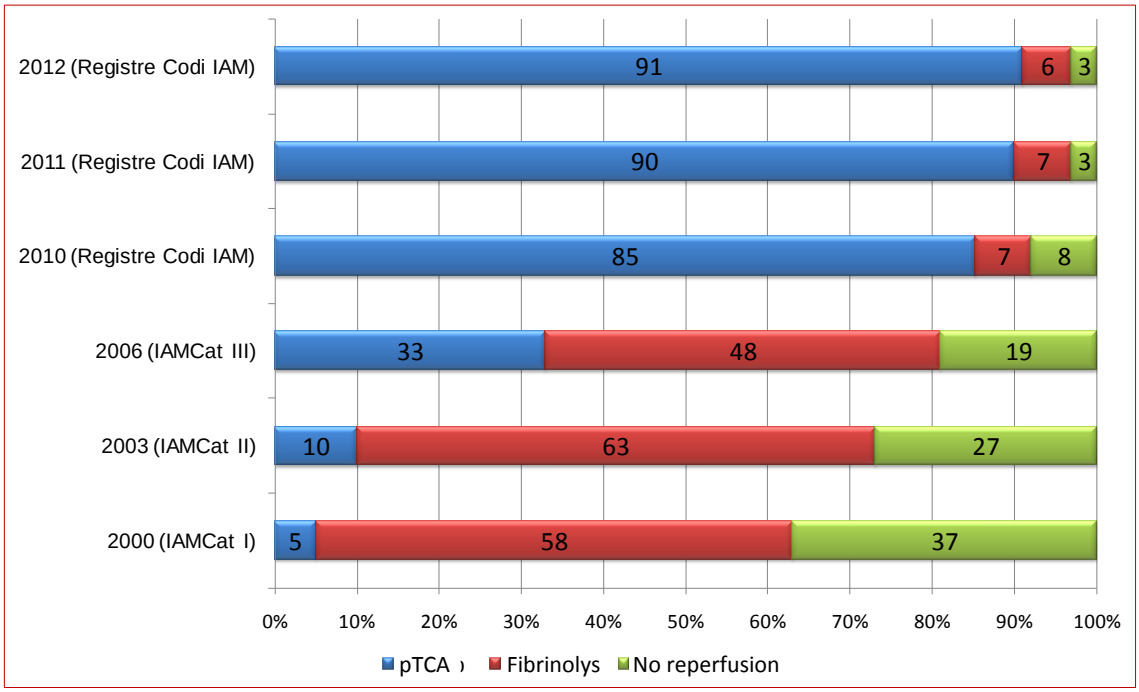
Besides these health objectives, the Health Plan for Catalonia has formulated many others that are linked to the 32 projects of which they consist. These projects are organized in 9 lines of action (Figure 2.7) and have to do with health programs, chronicity, organization of services and quality in high specialization, modernization of the organizational model and the contracting model, inclusion of clinical criteria in the decision-making process, governance of the system, and information systems. In 2012, more than 75% of the activities provided for in the projects were carried out. In the remaining chapters of this document, you will find different examples of operative objectives and their evaluation to date.

Figure 2.7. Lines of action and the projects of the 2011-2015 Health Plan



One example of the activities carried out within the scope of the projects of the Health Plan for Catalonia is the Heart attack code of the master plan for vascular diseases. The Heart attack code is a protocol based on the activation of a set of care units to rapidly and appropriately attend patients who suffer a myocardial infarction with elevated ST segment (MIEST). Optimum treatment of these patients, if applied in under 2 hours after diagnosis, is primary angioplasty, as this makes it possible to effectively re-establish blood flow to the obstructed coronary artery. Since the creation of the code in June 2009, the proportion of MIEST treated with primary angioplasty has undergone a clear increase, as can be seen in Figure 2.7, and has broken the barrier of 60% of cases carried out in under two hours. This organizing of services in the form of a code to attend urgent conditions has also been developed to attend emergency situations such as stroke, or patients with multiple trauma. Still in the context of heart attack and to show other types of important activity in a master plan, in 2013 a protocol was agreed for the treatment of double anti-aggregation in MIEST, which involved the collaboration of different units of the health care authorities and the scientific societies involved. Obtaining this protocol was the main goal of the master plan for 2013 in the context of the Health Plan for Catalonia, and it began to be applied in late November of that year.

Figure 2.8. Evolution of reperfusion in patients with MIEST. Catalonia, 2000-2012



Source: IAMCAT-I, IAMCAT-II, IAMCAT-III and Register of the Catalan Heart Attack Code. Catalan Ministry of Health.

Considerable effort was made to formulate the objectives of the health plan so that the time limits would be clear and the monitoring and evaluation indicators would show the evolution and level of achievement obtained with the implemented interventions and, where necessary, establish corrective measures during the validity period.

3. A system more oriented toward chronic patients

What was the purpose?

One of the main challenges of the 2011-2015 Health Plan for Catalonia, with the support of the program for prevention and care in chronicity, was to convert a care model focused on the disease to one focused on the person. To do this, we must move from a care model (social and health care) that is poorly integrated, broken up by levels, works to achieve biased results from a non-regional perspective and provides little collaboration, to an **region-based integrated social and health care model** that aims to respond to the social and health care needs of the people from a region-based perspective, with shared objectives, evaluated in terms of health, and with appropriate care units shared by professionals of all areas.

The strategy for implementing the model has **four main pillars**:

- Shared responsibility of people in taking care of their health, taking part in this process jointly with the other agents.
- Functional integration of social and health care services and organization of units where both interact.
- Promotion of the shared work of the professionals of different areas of care in the process of attending people with complex situations in order to make the community the preferred place in which to attend people.
- Prioritization of health protection, promotion and prevention as a more efficient instrument for reducing the impact of risk factors and chronic illness. Both in the health care and social areas and in interdepartmental actions that work on the factors that determine health.

The implementation of this line of action is structured in **six specific projects**:

a) Implementing integrated clinical processes for 10 diseases.

b) Strengthening health promotion and protection and chronic disease-prevention programs.

c) Promoting patients and caregivers taking responsibility for their health and encouraging self-healing.

d) Developing care alternatives in the framework of an integrated system.

e) Implementing regional care programs for complex chronic patients and patients with advanced chronic disease.

f) Implementing programs for the rational use of drugs.

Objectives for 2015

- Implement clinical practice guides (CPGs) and care routes in the 10 processes throughout the territory and include the Catalan Shared Clinical Records (HCCC).
- Implement five priority health promotion and prevention programs (healthy eating and physical activity, smoking, alcohol consumption, vaccination and childhood or prenatal stages).
- Extend the Catalan Expert Patient Program to five chronic diseases throughout Catalonia and achieve the inclusion of 5000 patients in the different disease groups. Offer educational material in the personal health file, potentiate the 061 CatSalut Respon service and the Canal Salut as information channels and channels for providing health advice.
- Reducing emergency admissions and readmissions in the 30 days following discharge of complex chronic patients in acute hospitals by 15%.
- Provide a case-management model for complex chronic patients in all the regions and defined care routes, and cover 25,000 complex chronic patients.

Where are we? What has been done?

Integrated clinical processes

We have the generic conceptual and procedural framework for designing care routes. The process of drawing up the care routes starts with selecting the **key elements of the process (KEP)** for managing each of the selected diseases. In accordance with the generic framework for designing care routes and the recommendations of the Catalan Health Care Quality and Evaluation Agency on international reference CPGs, **each region prepares and agrees its routes** and receives basic training in the process.

Four initial diseases have been selected (DM2, HF, COPD and depression). More than 80% of the regions have drawn up and begun to implement the care routes for these diseases. Practically 100% of the regions have the routes drawn up for at least three of these diseases.

All of the routes drawn up were drafted by interdisciplinary teams, shared between the care agents in the region, from all areas and levels involved, by means of working groups led by CatSalut and jointly led by reference clinical leaders.

The routes for these diseases have mostly been presented to the care teams involved.

For the initial four diseases, an evaluation strategy has been determined with a threefold vision (drafting/implementation process, care process and clinical results), which will be applied at the end of the year, so that we will have an updated map of the implementation of the routes.

The harmonized drug-therapy guidelines of the Committee for the Harmonization of the Use of Drugs in Primary and Community Care are also expected to be included in 2013.

The KEPs for dementia and chronic kidney disease have been drafted and those for chronic osteoarthritis and chronic pain will be ready by the end of the year.

Panel 3.1. Example of the contents of a care route

Care route for heart failure in Alt Penedès

Catchment population

96,000 inhabitants

Objectives

- Improve the care of people with heart failure via collaboration with professionals, coordination between providers, establishment and optimization of care circuits, and the promotion of best practices to allocate the most appropriate resource for the evolving situation of the patient.
- Contribute to reducing mortality and morbidity of people with chronic illness in order to improve results in health and quality of life.

Description

- Specific objectives have been agreed (application of reference CPGs, establishing and ensuring fluidity and appropriate times, avoiding duplication, rationalizing the use of resources, not omitting important care actions, providing a complete reference of how to manage the different scenarios in which a patient can find themselves, facilitating a transparent framework for evaluating the services and circuits, adapting the contents of the route in a flexible, evolving manner).
- Inclusion and exclusion criteria have been defined.
- The main reference CPGs are defined for use in the region, together with the diagnostic and classification criteria.
- The target population is established (953 cases expected in Alt Penedès).
- The care units involved are listed.
- The care processes and circuits are formalized in the main clinical situations relating to heart failure (new diagnosis, clinical stability, decompensation, advanced phase with a situation of complexity linked to the Complex Chronic Patient program).
- The criteria for referral to each unit are established.
- Evidence-based drug treatment are agreed, adapted to the different situations and level of conciliation of the medication.
- The nursing-care plan in heart failure is described.
- Documents for issue to the patients have been agreed and are detailed.
- The evaluation indicators are defined (coverage, rates of avoidable hospitalization and readmissions, communication between professionals, quality of treatment, access to shared information, patient self-healing protocol).

Results

- In the roll-out phase of the experience in clinical practice.

Source: *Insuficiència cardíaca*. *Ruta assistencial a l'Alt Penedès* (20/11/2012 update).

Health promotion and protection and prevention of chronic diseases

Prevention and control of smoking continues to advance

In Catalonia, 70,000 people stopped smoking, assisted by the different care levels. The health plan has set the challenge of coordinated work between the different levels, from prevention in the community to help in the different care levels. These community programs have been implemented in Vallès Oriental and in Lleida. Networking in Central Catalonia has also been strengthened.

Implementation continues of primary care, hospitals and smoke-free pregnancy programs, with coverage in excess of 80%. Online training in the "Smoke-free childhood" and "Smoke-free primary care" programs has reached 915 professionals.

The "Smoke-free classroom" program on preventing starting smoking has seen the successful participation of 3948 students and has been extended as a pilot with the "Smoke-free environments" program in Girona and Vallès Oriental.

Compliance with the law continues to be optimum when protecting the health of the majority of Catalan citizens. In light of the growing presence of electronic cigarettes, support has been given to the position of the hospital and primary care networks against the use of the electronic cigarette in health care centers and work has begun on autonomous-community regulations.

The "Smoking and Mental Health" working group has drafted a set of action guidelines which are the first of their kind in Spain, in smokers hospitalized with mental health problems.

Boost to the comprehensive plan for the promotion of health through physical activity and healthy eating in collaboration with all the sectors involved.

More than 100,000 people have gone from a sedentary lifestyle to healthy levels of activity (primary care data). Primary care clinical records show that 314,156 people were asked whether they did physical activity and almost 300,000 were given advice.

In 2013, in collaboration with the office of the Secretary General for Sport, the third edition of the World Physical Activity Day was held, with the participation of 174,771 people in 276 events organized by 391 institutions.

With regard to healthy eating, 279 establishments promoting the Mediterranean diet (AMED) have had 42,811 diners in 82 municipalities around Catalonia (in 2013, 40 new establishments were accredited, with 6996 diners).

In 2013, a total of 178 school menus were reviewed, covering 53,282 students (16,513 diners). The quality of the schedules continues to be good.

An agreement has been signed with the Red Cross to promote healthy eating. An estimation has been made of the cost of applying the healthy eating pyramid and the recommendations *Menjar amb pocs diners* (eating with little money) have been drawn up, which calculate how much it costs to follow the healthy eating pyramid: from €22 per child per week to €39 per adult per week.

Strengthening strategies for reducing the consumption of alcohol in the context of chronicity

A quality model has been defined in treatment of high-risk alcohol consumption and associated problems; the model ensures a continuum from early detection to treatment (primary care - social services - drug-addiction treatment center - hospital) and improved evolution of the prioritized chronic diseases, and places an emphasis on high blood pressure and depression (2013).

Specific training has been organized for primary care referents on alcohol, high blood pressure and other chronic diseases (May 2013).

Short intervention and early detection strategies have continued to be applied in health care ("Drink less" program). In 2013, a new platform was created to link up the professionals taking part:

- 6000 primary care professionals.
- 600 referents in alcohol.

Consumption of alcohol and drugs in the workplace has been promoted via the following:

- Protocol of best practices based on experiences in Catalonia and the recommendations of the project "European Workplace and Alcohol' - EWA (December 2012).
- The program "A la Feina, Alcohol 0,0" (at work, alcohol 0.0) in the Catalan Public Health Care Agency (July-December 2013).

The NitsQ programs for prevention in nightlife locales and areas have been implemented. A total of 9 cities in 6 different counties take part in these programs and 36 leisure venues have the Q quality badge. Four training courses were carried out (from January to June 2013) with the participation of 48 nightlife professionals. Training was also provided to 53 people who work behind bars at the local festivals of 3 municipalities.

Boost for educational strategies to reduce the risks associated with the use of drugs (alternatives to administrative fines): drafting of a Guide and dissemination.

Vaccine coverage has been adequate and has stabilized

The vaccine information system has been implemented, which allows for precise logistical management in all vaccine centers.

The common vaccine schedule is applied, with specific conditions maintained in the human papilloma virus and hepatitis B vaccines.

Bidding for the acquisition of vaccines achieved similar or better prices than those of the centralized bidding.

The circuits of the international vaccination centers are being reviewed with the aim of establishing a management position together with the Spanish Ministry of Health, Social Services and Equality.

Mother and child health

A major boost was given to the neonatal screening program in Catalonia. Since February 2013, screening is being carried out for 22 diseases. The incidence of the 19 new diseases included in the first 36,329 neonates is 1/3633 (4 cases of fatty acid beta oxidation disorders, 3 cases of amino acid disorders, and 3 cases of organic acidemia).

The emotional and sexual health promotion plan has been drawn up in collaboration with the University of Barcelona.

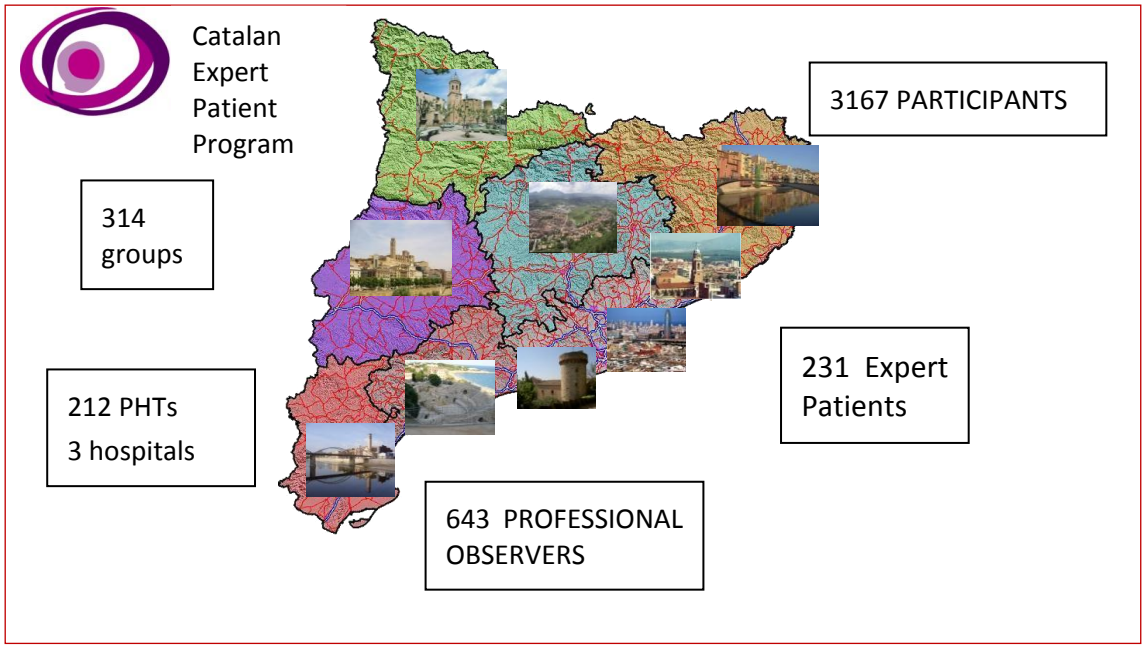
Drafting of the new protocol for the care of premature babies is in the final stages.

There has been greater detection of suspected child abuse recorded by hospitals in the Unified Child Abuse Register (UCAR). From December 2009 to the first quarter of 2013, there were 1413 suspected cases of child abuse reported to UCAR by 42 hospitals (9 out of every 10 cases reported to the General Directorate of Child and Adolescent Care are included in UCAR).

Promoting patients and caregivers taking responsibility for their health and encouraging self-healing.

The **Programa Pacient Expert Catalunya** (Catalan Expert Patient Program) is a central element of the development of this project. The 2011-2015 Catalan Health plan has contributed significantly to extending it to more patients and to the health problems prioritized in the context of the change in orientation toward chronicity.

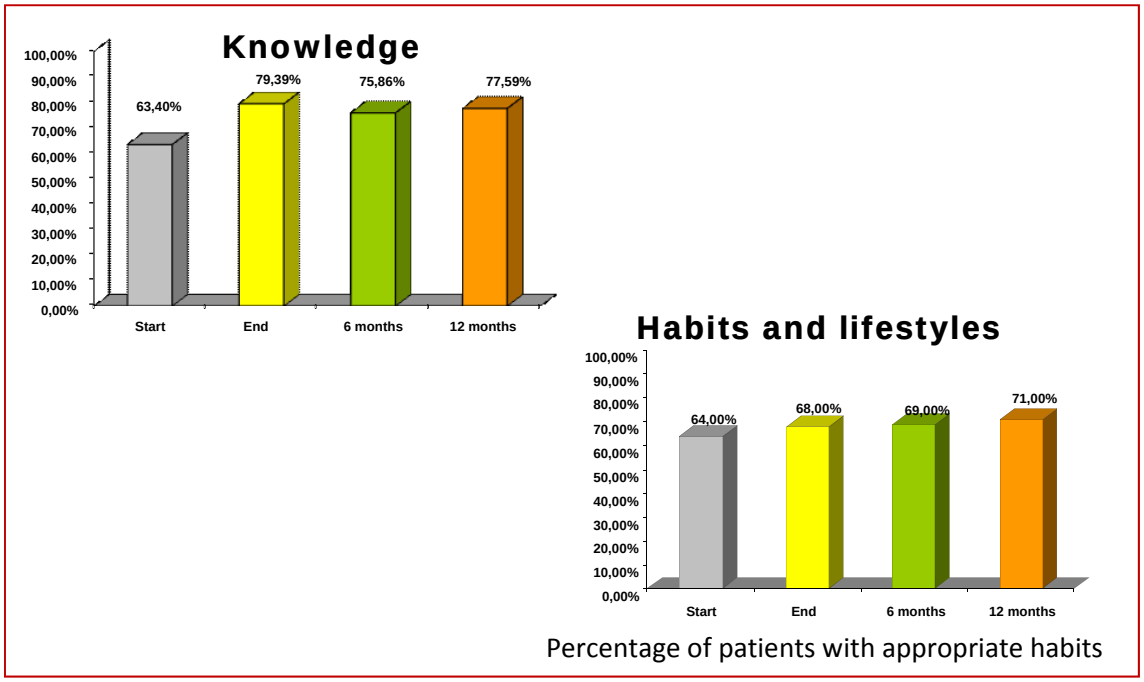
Figure 3.1. Actions of the Catalan Expert Patient Program 2006-2013



The diseases for which expert-patient groups have been set up to date are heart failure, chronic obstructive pulmonary disease, oral anticoagulant treatment, type 2 diabetes mellitus, fibromyalgia, smoking cessation, anxiety, and chronic-phase Chagas disease.

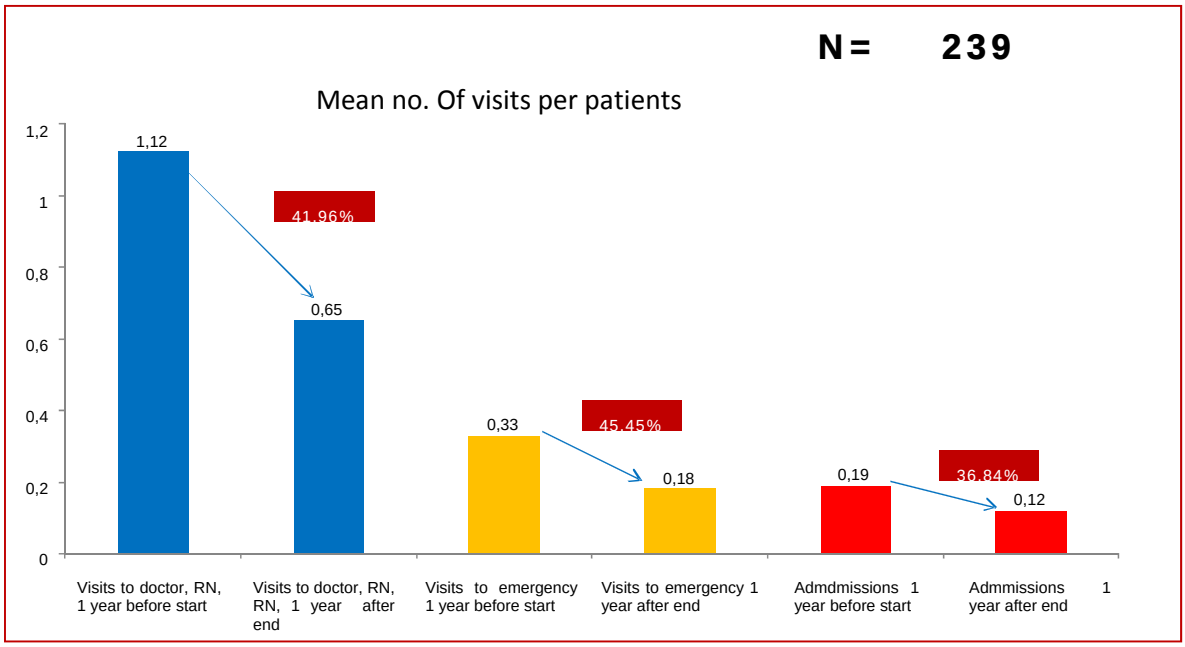
With regard to implementation of the program, there has been an improvement in all the parameters evaluated: knowledge, habits and lifestyles, self-healing and quality of life. This improvement has taken place in all the diseases included in the program. Furthermore, the improvement tends to increase up to 6 and 12 months after the intervention has finished.

Figure 3.2. Catalan Expert Patient Program. Groups of patients with COPD



An improvement has also been observed in the use of health care services relating to the underlying disease or decompensation of the disease, both in visits to primary care and in care provided in emergency services and in hospital admissions.

Figure 3.3. Catalan Expert Patient Program. Groups of patients with COPD



Panel 3.2. Main elements of change provided by the Catalan Expert Patient Program

For People	For Health Care Professionals (Group Observers)	For the Health Care System
Awareness of the disease. A more active role and shared responsibility. Sharing of knowledge and experiences between patients, using the same language. Assuming the importance of good compliance with therapy. Encouraging self-healing and improving quality of life. Identification of alarm signs and symptoms and how to act. Shared decision-making. Satisfaction of the participants.	Identification of the capacity of the patients in making decisions. Change in the relationship with the patient: active listening, greater participation of the patient, agreement on actions. Observation that people with a chronic disease are often not aware that they have the disease, which makes it more difficult to change habits and lifestyles. Need to use more appropriate, accessible and understandable language.	Encouraging change from a paternalistic model to a deliberative model. Informed patients sharing responsibility make better and more efficient use of health care services. Reduction in the use of resources in the form of visits to primary care and emergency departments and fewer admissions to hospital due to decompensation. Helps to make the system more sustainable. Good results obtained, comparable to international experiences, which show it to be effective.

We are currently in the process of finalizing two new EPP-CAT guides: depression and obesity.

A new line of action, the **Catalan Expert Caregiver Program**, has been initiated. A common core and 4 specific areas have been defined, aimed at caregivers looking after chronic children with dementia, complex chronic patients and patients with severe mental disorders.

In parallel to these actions on expert patients and caregivers, work is being carried out in three other areas of interest:

- **Health care literacy**

  Design work is in progress to carry out, in the first quarter of 2014, an analysis of the situation of the Catalan population, using the CHCS as a system for evaluating it, the questionnaire used in the European study on this topic. This study evaluated the situation in 8 states of the European Union. Based on the results and after they have been evaluated, an action plan will be designed with actions aimed at improving the level of literacy regarding health care in patients with chronic diseases and among the general public.

- **Model of education for health:**

  In this regard, based on the analysis of the situation carried out in 2012, in 2013 work is being carried out with a group of experts on defining the key aspects to be taken into account in group education and its evaluation process. The model is due to be presented at the end of 2013.

- **Virtual care model**

  With the aim of promoting and facilitating greater access for chronic patients, caregivers and the general public to the social and health care system, work is being carried out with TicSalut on designing what will be the virtual care model. Two expert groups have been set up: one for the technological side and one for the clinical side, in order to jointly define which technological platform or platforms will be used for this model and what range of services will respond to the needs of the patients.

Care of chronic patients in a situation of complexity and alternative care models

The work on these projects is leading to change and major transformation of the model of care and, at the same time, is generating a change of model, more focused on the patient and their family, by redesigning and reorienting the role of the professionals and the organizations of the different areas that must work in collaboration in the care of these people.

Although both the change and the transformation will take time, initial results have been obtained and milestones met, which mean progress in the implementation of this project:

- Since January 2013, the HCCC has been provided with the ability to carry out **ad hoc marking of the conditions of complex chronic patients (CCPs) and patients in the advanced chronic care model (ACCM).** This consists of identification in each of the electronic clinical records of the different providers and automatically uploading the record of these established conditions to the HCCC. As of 15 November 2013, there were more than 63,000 people with one of the two conditions recorded with an identified observed prevalence of greater than 0.7% of the Catalan population, a figure that already exceeds the goal of the health plan established for 2015 (identification of 25,000 CCPs).
- **Route for the care of complexity.** All the regions are designing and implementing the care route for people in situations of complexity. Panel 3.3 shows an example. The aforementioned care-route methodology is being used, together with a Guide to the implementation of a model of care of complexity, which was designed and published in 2013. This document provides an implementation check list, which will facilitate the implementation of key elements in this care process and a real 24/7 model that ensures a good response capacity in the event of any crisis or exacerbation and a good model of transition treatment that ensures continuity of care in these patients once they are released from hospital.
- The **shared individualized intervention plan (SIIP)** has been designed and implemented; this plan is drawn up by the clinical professional at local level and transferred to the HCCC with the aim of comparing important and critical information when accessed by any clinical professional who has to play a part in making decisions regarding the patient at any time, with a view to 24/7 access. This is a very important element for good decision-making, particularly in situations of crisis or exacerbation. This document is made up of information that is automatically included in the intervention plan and of highly important information generated by the reference medical and nursing professionals, such as, for example, information in the Indications section in the event of a crisis, and the early decisions plan, which is especially important in the case of ACCM patients.
- A model for the **stratification of risk for the entire population** of Catalonia has been designed, based on the information on patients' morbidity, admission

to hospital and drug consumption - factors that are used to assign the patient a level of risk of future urgent hospitalization, drug use, cost of care and even probability of death (Chapter 6).

- Although Catalonia is at the lower end of the scale among European countries in terms of acute hospitalization rates, there has been a reduction in **potentially avoidable hospitalization** related to emergency admissions for a set of chronic diseases (COPD, CHF, etc.). For every 100,000, we have gone from 1039 in early 2012 to 920 in July of 2013 - a reduction of 11.4% in a period of 21 months. Each of these diseases also shows a reduction in hospitalization (Figures 3.3, 3.4 and 3.5).
- The number of **readmissions** in chronic patients, according to the synthetic indicators that records readmissions at 30 days for a set of potentially avoidable reasons, has remained stable for the same period.
- The 8 regions have begun to develop a **collaborative community social and health care model**. This model is based on the design of a collaborative care model that makes it possible to share information of common interest and jointly define transversal and common indicators. Panel 3.4 shows and example of implementation of the model in the territory. In early September, by means of a **government agreement, the creation of the interdepartmental plan for the interaction of health care and social services** was approved; this plan will facilitate a new context of support for a new model of integrated care between social services and health care services at community level.
- A **new model of residences for the elderly** is being introduced, which includes different elements of improvement: introduction of local information systems in the residential care centers (eCAP, OMI-AP, etc.), rationalization and review of drug prescribing in people admitted to institutions.
- It is necessary to define and establish a **regional agreement with the 061 CatSalut Respon service for the implementation of the 24/7 model** and to include the local agreement with the medical emergencies system (SEM) in the design of the complexity care route.
- The planning criteria have been defined regarding **care alternatives to hospitalization in the area of care of chronicity**, which are based on the model defined in the project for the development of new models of alternative care in chronicity. The new planning criteria (Panel 3.5), initially focusing on care of patients admitted to hospital with a number of health problems when they could benefit from other, more appropriate types of care, sets the stage for major change with a gradual progression toward intermediate care to replace acute admissions, whether domiciliary care or internment with subacute or post-acute care, with the support of the day hospital and close collaboration with primary health care and social services. The roll-out of subacute resources in certain regions has begun, with the collaboration of the Long-term and residential care master plan, and long-stay resources are also being converted to subacute/post-acute resources in the regions with more places and higher rates of use by the population.

Panel 3.3. Route for the care of complexity (CCP and ACCM) in Osona

Catchment population and target population

156,953 inhabitants. The prevalence of CCPs and of ACCM patients in the general population is between 2% and 3.5%, and 1%, respectively - figures that, when applied to Osona, mean a maximum of 5400 CCPs and 2250 ACCM patients.

Objectives

- **Ensure integrated, effective, efficient and satisfactory care of CCPs and ACCM patients** by means of a change in the provision of services focusing on collaborative care between primary care, the acute hospital, the intermediate-care hospital, social services, the 061-SEM service and regional continuous urgent care (ACUT).
- **Maintain however possible the level of health of this group of patients**, in terms of their functional status, in order to achieve good control of symptoms, promote safety aspects and reduce adverse reactions.
- **Control potential crises and decompensations of patients at an early stage by prioritizing domiciliary care** whenever possible, with proactive, coordinated action, by reducing visits to the emergency department, transitions and admission to hospital and, in the event of admission, with the guarantee of appropriate stays.
- **Provide support for possible social deficits** of the patients and their caregivers.
- **Establish a system of shared information** between the different providers who participate in care to ensure compliance with the SIIP.

Description

- The care route describes the actions at the different points of the patient's course. It has been drawn up by professionals from all levels and resources (health and social), who work in coordination for a core group and different subgroups.
- Primary care validates and registers the cases (CCP and ACCM). New cases may also be proposed by other levels. This register is exported to the HCCC from the different information systems of each provider and to the joint regional platform.
- The primary care team (EAP) - family doctor, nurse, social worker - is always the reference for the patient and caregivers and ensures care while the centers are open. The EAPs have a reference **case-management nurse** for these patients. In the stable phase, primary care applies the SIIP, which includes information regarding the status of the patients and the guidelines to follow in the event of a crisis.
- In the event of decompensation and when the primary care center (CAP) is open, it is the EAP that acts. Depending on the severity, the EAP decides on the best resource, giving priority to domiciliary care whenever possible. If the crisis cannot be dealt with by the EAP, it may decide to activate the **regional support team (domiciliary hospitalization)**, **admission to an intermediate-care hospital** or **day hospital**, or to refer the patient to the emergency department of an **acute hospital**.
- In the event of decompensation outside the working hours of the CAP, the 061-SEM service and the ACUT services guarantee the care of the patient, in accordance with the guidelines established in the SIIP available in the HCCC and which can be consulted, as well as the clinical assessment, which is performed at that time.
- Transitions between resources are notified between the different case-management nurses of the EAPs and the nurses managing continuity of hospitalization care.
- Process and results indicators have been established to evaluate the project.

Expected results:

The care route is in the implementation phase. The expected results include improved coordination and satisfaction with care and involve more appropriate visits to the emergency department and admissions to acute hospitals, by means of integrated care between all the providers, prioritizing domiciliary care, where the figure of the case manager and the use of information systems are key elements of the project.

Source: Care route for CCP and ACCM in Osona. July 2013 version.

Panel 3.4. Collaborative model for the approach to health care and social care in the municipality of Tona

Reference framework and target population

Tona is one of the 8 pilot projects chosen by the program for the prevention and care of chronicity and the Catalan Institute of Patient Care and Social Services to implement a collaborative model of integrated care between the basic social services and primary health care, with the participation of other agents of the community, with the aim of improving the quality of care of the target population (CCP, especially when there is a situation of dependency, mental health and victims of violence or at risk of violence) through the interaction and coordination between the health care and social services.

Objectives

- **Ensure integrated, continuous and coordinated social and health care** for the social and health care needs of the citizens of the municipality of Tona.
- **Define the operating and functional bases for social and health care cooperation** for a better approach to care of complexity.

Description

- The project assumes the need to redefine the current care model and tends toward a collaborative model in care focused on the person, from a global perspective of integration between the social services (basic and residential) and the health care services in the region of Tona.
- The action plan includes several lines of improvement, such as the following:
    - Definition of joint responses despite the diversity in the points of entry: with the creation of a local dependency commission and by facilitating shared access to the data of both.
    - Improvement of care in the home by incorporating the domiciliary dependency care service and technical assistance bank of Osona in the planning of individual care (joint drafting of the SIIP and the social services individual care plan), and the potential optimization of the telephone assistance service, or by coordination of the preventive domiciliary care service before admission to hospital.
    - Drafting of a joint plan for health prevention and promotion and active ageing.
    - Integration of residential services in the model by establishing agreements with the 3 residences in the municipality, including e-CAP points in these centers.

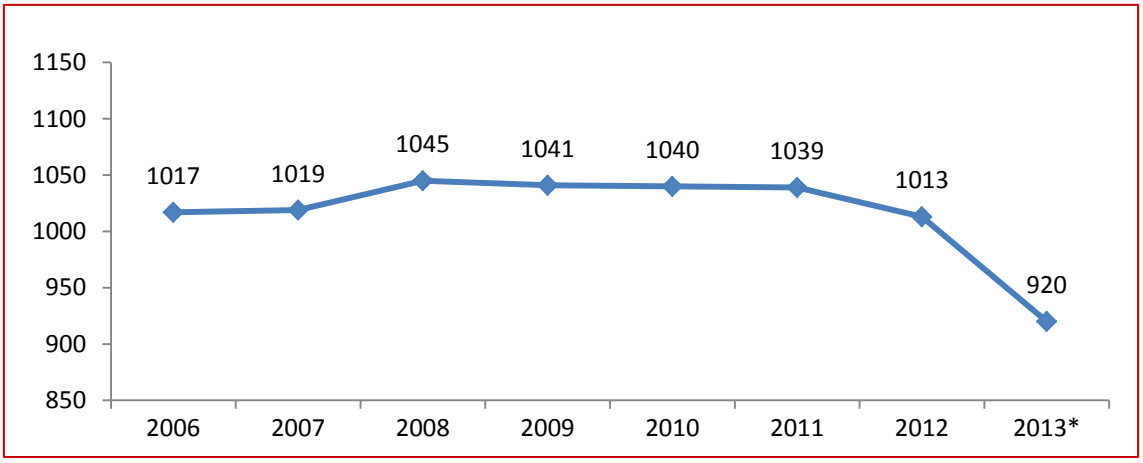
Conclusions

So far, we can share some lessons learned on defining and promoting environments of collaboration and interaction between all the services involved, which we would like to :discuss

- The need to understand this change as an ongoing learning process.
- The need for regional leadership with reinforcement of the primary care units as central elements in the change of model.
- Despite the priority care of situations of complexity, which we must not forget, intervention in terms of prevention to increase relevant results for the existing assets at local level.
- The need to improve contracting, with shared goals, in order to keep moving forward.

Source: Functional plan for the implementation of a collaborative model for the approach to health care and social care in the municipality of Tona.

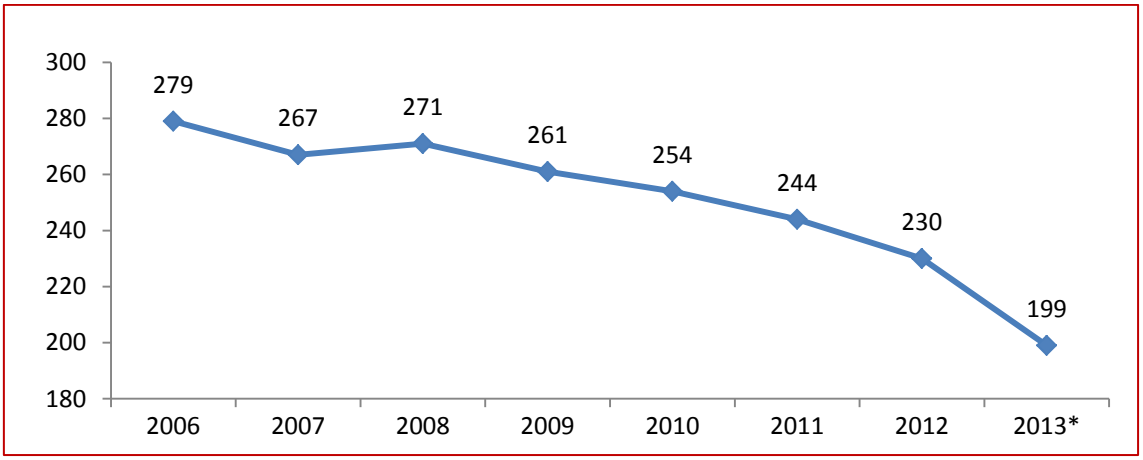
Figure 3.3. Evolution of the rate of avoidable hospital admissions



Includes: chronic obstructive pulmonary disease, heart failure, pneumonia, complications of diabetes mellitus, asthma, urinary infections, dehydration, and high blood pressure.

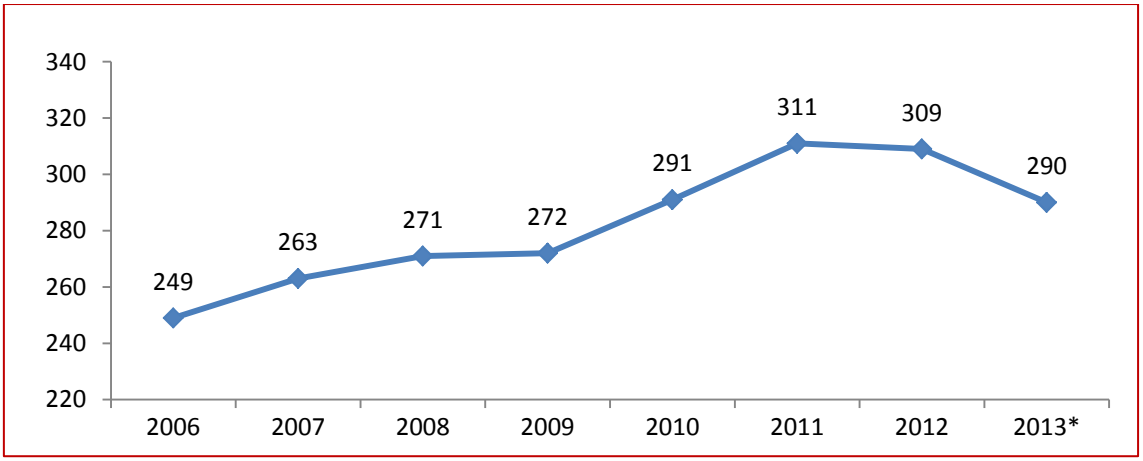
* Annual estimation in September 2013

Figure 3.4. Evolution of the rate of avoidable hospital admissions due to chronic obstructive pulmonary disease



* Annual estimation in September 2013.

Figure 3.5. Evolution of the rate of avoidable hospital admissions due to heart failure



* Annual estimation in September 2013

Panel 3.5. Planning of care alternatives to hospitalization in chronicity

Objectives

- Establish the different modes of care in chronicity, other than hospitalization, in the framework of an integrated model.
- Define planning criteria (care demand and capacity) seeking adaptation of care according to the different modes of care, avoiding the implementation of new additional resources that may dilute the responsibility of existing resources or that do not replace other, less appropriate resources.
- Estimate the impact on the current structures and their activity.
- Facilitate reference elements to guide the purchase of health care services and organization of the services offered.

Reference elements of the model and areas of change

- Need to adopt an integrated, interdisciplinary care model for complex chronic patients, with articulation of all the units involved, with a regional perspective and collaboration with social services.
- Consolidation of the concept of intermediate care (as an alternative to acute hospitalization), including subacute, post-acute and domiciliary hospitalization, as well as day-hospital care.
- Placing importance on the patient's home and the community environment as the preventive and therapeutic preference, provided that social conditions and technological requirements permit.

Trends and scenarios

- Case studies susceptible to benefit from care alternatives: 110,000 discharges from acute hospitals of selected diagnostic groups (19% of all conventional hospital discharges and 24% of stays).
- Regional differences are found between population rates of acute hospitalization, convalescence and domiciliary hospitalization.
- Acute hospitalization could be reduced by 5.2 admissions per 1000 inhabitant among the general population. Part of the reduction could be treated without admission by primary care and another part would be intermediate care in the home or subacute admission, with the support of the day hospital.
- In acute hospitalization, the length of stay could be shortened using alternatives of intermediate care in the home or post-acute admission.

Applications in the territory

- Change guided by the tendency toward expected population rates, of different sizes in each location based on their initial level and specific characteristics.
- The mode of intermediate care in the home involves revising the currently predominant model (essentially aimed at reducing stays, unequal implementation and a low level of regional integration).
- In intermediate care with internment (subacute/post-acute), the implementation of specific units requires a certain volume of cases.
- Gradual process of change, taking into account the integral perspective and the set of alternative modes that come into play. We need to think more about a portfolio of services than about infrastructure.

Also in the revision phase is the **model of care of the mental health network**, through the Mental health and addictions master plan, so that it will also be possible to have a definition of the different alternative care modes and a set of planning criteria that, as in the previous point, have a perspective of the integrated model as a whole and can provide guidance regarding the purchase of services and the regional reorganization of the services.

Rational use of drugs.

Priority is given to the **review/conciliation of chronic medication**, particularly in complex chronic patients (CCP), systematically, while ensuring the appropriateness of the medication plans duly conciliated between the different environments, and improving compliance with these reviewed and conciliated treatments (Panel 3.6).

- The methodologic document Basic management of medication in chronic patients: Conciliation, review, de-prescribing and adherence has been drafted. CatSalut Instruction 4/2012 on requirements and minimum basic criteria for the prescribing, review and renovation of chronic treatments by prescription.
- Review and conciliation activities are being developed and drug conciliation protocols are being drawn up by providers in the territory.
- There is a methodologic document and an indicator for monitoring the **review of CCPs in terms of safety incidents**. In March 2013, 20 safety incidents were detected for every 100 CCPs. Monitoring this indicator will help to evaluate the review actions that contribute to reducing this figure.
- The framework document, *Prevention and care of chronicity from community pharmacy* has been drawn up. Soon, pilot experiences linked to improving compliance and safety (personalized dosing system) will be initiated.
- Work has been carried out on the harmonization of treatment of diseases prioritized by the Health Plan for Catalonia. There will soon be a drug-therapy consensus in the care routes for DM2 and HF.

Panel 3.6. Conciliation, review, de-prescribing: definition and stages

Type of action	Definition	Stages
Conciliation	Formal, protocol-based process of systematic comparison of the patient's usual medication with the prescribed medication after care transition or transfer within the same level of care, with the aim of analyzing and resolving detected discrepancies, and documenting and communicating changes, in order to ensure that patients receive all the necessary drugs they were taking previously and that are appropriate to the new prescription.	1. Detection (interview with the patient, review of the clinical records and medical reports, comparison and detection of discrepancies). 2. Clarification (contact with the prescriber to request clarification, documentation of changes in the clinical records). 3. Resolution (updating the patient's therapeutic plan, notification of the patient and/or caregiver).

Review	Critical and structured examination of the patient's therapeutic regimen, agreed with the patient, with the aim of optimizing its impact, reducing problems relating to the medication, simplifying the dosage regimen and maximizing efficiency. Review of the medication seeks to adapt drug treatment in chronic patients over the long term and during the different stages of the course of the disease.	1. Creating a hierarchy of the diseases, taking into account the criteria of the professional and the patient. 2. Associating the drugs with the diseases of the patients. 3. Establishing the therapeutic goal for each treatment, taking into account the conditions of the patient. 4. Application of the algorithm for clinical review of the medication.
De-prescription	Planned and standardized withdrawal of chronic medication, broadly recommended in the elderly, especially in advanced disease.	1. Recognition of the need. 2. Preparation of the patient. 3. Withdrawal of drugs.

In the scope of the **shared responsibility of the citizens** in the rational use of drugs, we can highlight the following achievements:

- The video Medicament 360: m'agrada saber el que prenc (drug 360: I like to know what I'm taking) has been edited and distributed among the health care centers of Barcelona. Actions have also been taken in the non-health care network (Barcelona City Council, Network of Libraries, participatory councils, etc.) and there have been joint interventions with community pharmacists. In the future, these interventions will have to be extended to the whole of Catalonia.
- The patient can access information on line about their medication plan by means of the personal health file. New functionalities are being studied in order to include them in the mobile device.

In terms of tools that facilitate **improved safety and efficacy**, the actions regarding the electronic prescription have focused on the following:

- Establishment of the **integrated medication plan**: 90% of patients have 90% of their medication in the electronic prescription.
- Functional design of a **new clinical safety module** integrated in the electronic-prescription system, with the aim of improving the quality and safety of drug prescribing by preventing adverse reactions associated with the use of drugs. The module will centralize the management of clinical safety in a single information system that, as well as exchanging information with external systems, will be able to process the data in order to issue the corresponding safety alerts.
- Development of the clinical content of the clinical safety module in the electronic prescription. In the initial phase, the module will issue alerts on exceeded maximum doses, drug interactions, duplicated treatment, drugs not recommended in geriatric patients and teratogenic drugs.
- The project is currently in the pilot phase with different providers.

Panel 3.7. Example of the contents of a de-prescription project

Project for de-prescription of chronic patients in the city of Barcelona

The concept of de-prescription

- De-prescription consists of the review and planned and standardized withdrawal of chronic medication, especially in the process of care of the elderly or patients with advanced chronic disease. There are currently no available guidelines specifically aimed at withdrawing medication; for this reason, de-prescription must be based on the epidemiology of the problems related to medication and must be applied on an individual bases using clinical criteria.

Objective

- Evaluate the quantitative and economic impact of the withdrawal of drugs for reasons of safety or efficacy in chronic patients attended by the primary care teams in the city of Barcelona of the Catalan Health Institute.

Description

- The study area are the 51 EAPs of the Barcelona Primary Care Division of the ICS (Catalan Health Institute).
- The study is a patient cohort who have been prescribed the following drugs: hypolipidemic agents for primary prevention in patients over 84 years of age, drugs for Alzheimer disease for a period of more than 2 years, ulcer drugs without complying with gastric-protection criteria and drugs for osteoporosis in patients under 60 years of age and residential patients, as well as patients taking bisphosphonates for periods of over 5 years.
- The intervention consisted of providing an information session for the EAP on the scientific evidence justifying withdrawal of the proposed drug. Furthermore, each physician was given a list of their patients who had been prescribed any of these drugs and then subsequently received information on the drug withdrawal so that they could monitor the impact of their action and continue with the process.
- The cohort was analyzed at three points in the period between 30 May and 31 December 2012. To calculate economic savings, an annual estimation was made of the cost of the withdrawn drugs based on the difference in the cases in those who had had the medication withdrawn and who continued without it until the end of the study.

Results

DRUGS SUBJECT TO DE-PRESCRIPTION	Baseline No. of Patients (30/5/2012)	No. of Patients in Whom the Medication was Withdrawn (%) (31/12/2012)	Annual saving of the withdrawal
HYPOLIPIDEMIC AGENTS IN PRIMARY PREVENTION			
Statins in people > 85 years of age	8,570	596 (7%)	€56,643.8
TREATMENT OF ALZHEIMER DISEASE			
Treatment for 2 years or more	2,850	593 (20.8%)	€615,889.8
ULCER DRUGS IN PATIENTS WITH NO GASTRIC-PROTECTION CRITERIA			
Use of proton-pump inhibitors	87,415	12,379 (14.2%)	€833,053.5
OSTEOPOROSIS TREATMENT			
In people < 60 years of age	4,430	1,334 (30.1%)	€513,536.6
Bisphosphonates for 5 years or more	7,812	3,336 (42.7%)	€781,825.0
In residential patients	336	171 (50.9%)	€65,828.2

- The methodology of de-prescription is feasible in primary care and achieves a considerable impact on the volume of patients and the reduction of spending - greater in residential patients.
- It has been very well received by physicians due to the level of evidence available regarding the selected drugs.

Source: DAP Barcelona. Catalan Health Institute.

Key elements for implementing the projects

Throughout this period of the execution of the 2011-2015 Health Plan for Catalonia, it has been possible to identify a number of key elements for implementing the projects. These are elements that can act as factors that favor change or as conditioning factors that need to be controlled and overcome. Below, we highlight those that best summarize the elements observed in the projects prioritized in this line of action of the health plan.

Key elements for implementing projects of change to achieve a system more oriented toward chronic patients

1. **Sharing clinical and social information of common interest** between the different professionals, organizations and care areas, as well as social areas.
2. The participation of all the agents in the entire process, especially the **clinical leaders**. Create a genuine culture of collaboration between the professionals and organizations that work in the different areas, as well as between clinical leaders and managers.
3. Implement a **model of quality in the exercise of the health care authority of CatSalut** and **regional governability** in order to promote shared visions and collaborative practices within the same region.
4. **Assign common transversal objectives** to each contracting region attributed to the different organizations and care areas that share a care process, and facilitate evaluation via the HCCC; in the future, also in the social area.
5. The **new contracting and payment model**, which generates integrated care and promotes collaborative work in the region between the institutions and professionals of the different patient-care areas; in the future, also in the social area.
6. **Contribute to a strong primary care with an important position of leadership that is shared** with other care areas.
7. Implementation and **promotion of virtual care models among professionals and between professionals and citizens**.
8. Design of a **24/7 care model** that ensures a good response capacity in situations of crisis and a good level of proactivity in situations of complexity.
9. Implement with sufficient strength **decisions in the area of public health with an interdepartmental view**, aimed at promoting more healthy lifestyles and better health results in the future.
10. Implement actions and interventions in a synergetic manner in a single population in a single region. This is what we call a **multilever strategy**.

4. A more integrated and resolutive system, from basic to territorial level

What was the purpose?

In the transformation of the health care system to adapt it to the needs of the population and seek the maximum level of quality and efficiency one line of action considered was the **improvement of resolution and accessibility in the framework of an integrated care model**.

The **principles** that guide this line of action are the following:

- Basing the actions of the health care services on the most cost-effective interventions.
- Assigning the most appropriate functions and interventions at the care level in terms of quality and optimization of professional skills.
- Ensuring a coordinated care service that provides patients with comprehensive treatment.
- Improving access times as a result of the improved resolution of the first levels of the system and management of waiting lists using clinical criteria.

The action was structured around **four projects** that affect the relationship between different care units and had a strong potential to improve resolution from the perspective of the system as a whole:

a) Improvement of resolution in the areas with most frequent relations between primary care and specialist care.

b) Consolidation of the transformation of the emergency care model.

c) Regional organization of the services portfolio by level of complexity.

d) Integration of public health and the community in the care model.

In general, for the different areas selected, the dynamics of reorganizing processes seeks the following **strategic objectives**:

- Increase the resolution capacity of primary care in relation to prevalent, low-complexity diseases and the continuous monitoring of people throughout their life and a community-based approach to the health of the populations.
- Improve the accessibility and efficiency of specialized care for the treatment of more complex diseases and speed up diagnosis and treatment with the organized intervention of the different professionals.
- Ensure continuity of care by integration of care and networking between care teams and organizations.

The **strategy of change** begins by defining, with the participation of institutions and professionals, the criteria and orientations that make up the basic regional agreements, making the care compartments more permeable and integrated. Application involves assuming care teams with shared objectives and agreed organization of the care

process, consolidated relationship routes and regional management elements, based on clinical leadership, all established in the regional agreements.

Objectives for 2015

- Reduce the number of visits to specialist care by between 10% and 15%, depending on the specialty, without affecting the quality of care, for ophthalmology, musculoskeletal diseases, mental health, dermatology and urology, and reduce variability between regions.
- Reduce by 10% the waiting time for a visit to the specialist and for diagnostic tests.
- Reduce visits to hospital emergency departments by approximately 10%, direct the demand to more appropriate levels of care and reduce variability in use.
- Increase to 75% the rate of emergencies attended in hospitals that have previously gone through telephone contact, a low-complexity unit or have been brought by the SEM.
- Implement the organization of the portfolio of services in six selected areas of specialization and achieve a 75% rate of concordance between observed hospital flows and the defined levels of complexity.
- Fully implement the portfolio de services of the Catalan Health Service contract it through the Catalan Health Institute, and provide the range of care services in the pharmacy offices.

Where are we? What has been done?

Improvement of resolution in the areas with most frequent relations between primary care and specialist care.

Collaboration between primary care and specialist care has been developed by focusing on the areas with most frequent relations between primary care and specialist care.

In the first phase of implementation of the health plan, the regional agreements were established, with shared objectives, organization of the process and clinical leadership, beginning with those in which the process of **definition of the care model** was most advanced, via existing master plans (Master Plan for Rheumatologic and Musculoskeletal diseases; Master Plan for Mental Health and Addictions) or from the orientations drawn up by specific working groups with the participation of clinical professionals and consensus with scientific societies and the service-provider organizations, as in the case of the care model in ophthalmology. The care model in dermatology was defined and agreed in 2013 and will begin to be implemented in the territory in 2014, following the outline of those mentioned above. The defined model will also serve to integrate experiences in teledermatology.

Taking advantage of the fact that the Catalan Ministry of Health and the scientific societies have worked on the model of allergy care, this area has also been dealt with in this area, taking into account that the implementation dynamics follow a similar outline.

The implementation of these **regional agreements** is in a process of gradual expansion. In more than 50% of the territory, implementation has begun of the care models for musculoskeletal diseases and ophthalmology, with joint working groups of professionals from primary care and specialist care. Although it is still too soon to

observe aggregate results, there are experiences that illustrate the dynamic generated and the initial impact results (Panels 4.1 and 4.2).

Also, in the area of mental health, the level of development of the portfolio of mental-health services in primary care has been reviewed, in accordance with the Master Plan for Mental Health and Addictions, and unequal levels of implementation have been observed, which we intend to correct using the regional objectives that link the primary care teams and the mental health centers.

Panel 4.1. Experience of application of the model of care of musculoskeletal diseases

New model of integrated care of lower back pain in Central Vallès Oriental

Catchment population

246,000 inhabitants.

Objectives

- **Improve continuity of care** by transforming a fragmented care model into an integrated care model (primary care: physicians, nurses, rehabilitation and specialist trauma, rheumatology and pain clinic).
- **Reduce variability and increase efficiency** in the process of diagnosing and treating lower back pain.
- **Protocolize the lower back pain process** as a tool for supporting clinical decisions.
- **Rationalize the use of diagnostic technology** in lower back pain: computed tomography (CT) vs magnetic resonance imaging (MRI).

Description

- A clinical lower back pain route with a defined portfolio of services, referral and return criteria, clinical management algorithms, referral and request for further tests is agreed.
- A single acces point is established in specialist hospital treatment.
- The educational, non-pharmaceutical treatment support tasks are defined and planned in the area of primary care with the participation of physiotherapists and nurses.
- Evaluation process-monitoring indicators and guidelines are established. A protocolized referral sheet is defined.
- A virtual spinal consultation is initiated.

Results

Comparison of indicators for 2011 and 2012 based on diagnoses of lower back pain in primary care consultations. More than 1600 referrals were analyzed:

- **25% reduction in referrals to hospital** for lower back pain 2012-2011.
- **78% reduction in lumbar CT scans for lower back pain with a 15% increase in lumbar MRI scans.**
- **44% reduction in waiting lists for lower back pain** in Granollers Hospital.
- **Reduction in the mean duration of absence from work due to lower back pain by 44%** (in a three-month audit).

Source: Observatory on Health Care Management in Catalonia

Panel 4.2. Experience of the application of the model of care of ophthalmology

New organizational model for ophthalmology in Barcelona - Litoral Mar

Catchment population

310,000 inhabitants.

Objectives

- **Increase the resolution capacity of primary care** in prevalent, low-complexity disease.
- **Improve access to and efficiency of specialist care.**
- **Ensure continuity of care**.

Description

- Multidisciplinary group: family doctors, ophthalmologists, optometrists, primary care team coordinators and representatives of the Barcelona - Litoral Mar Comprehensive Health Care Committee.
- Shared clinical leadership (ophthalmologist, family doctor and optometrist).
- Prioritization of tasks: 12 protocols were drawn up based on the 21 main reasons for consultation and chronic diseases identified.
- Diagnosis and treatment algorithms are defined and the level of priority in referral is defined based on clinical conditions.
- Working sessions are established with the primary care teams and tools are provided for online communication.
- Existing indicators are reviewed to define the evaluation process.

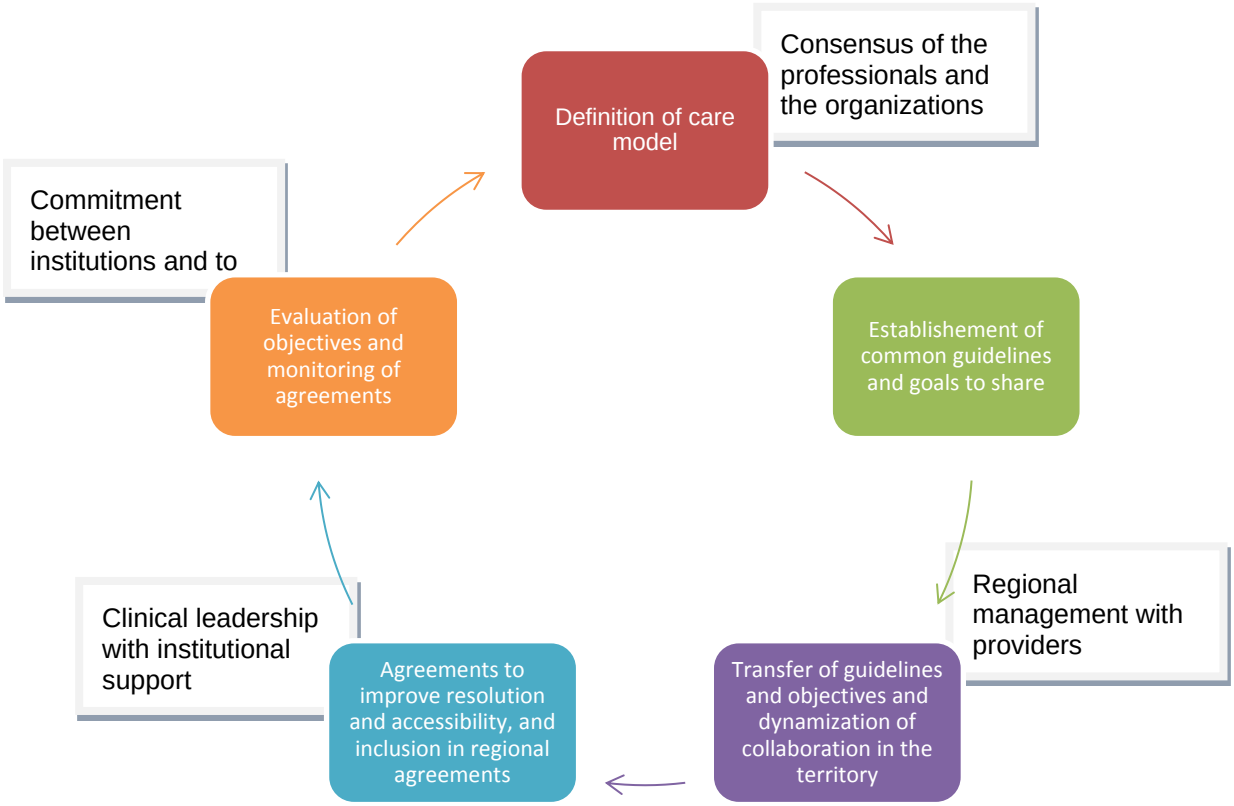
Results

- The experience is being implemented in clinical practice.

Source: Presentation at the City of Barcelona Health Plan Conference (15/5/2013)

The implementation of this transformation of the care model, while focusing on specific areas, involves mobilizing all the primary care health care professionals (family doctors, pediatricians and nurses) and the professionals of the specialist care services in the prioritized areas. Clinical leadership, channels of relations between care levels, evaluation of shared objectives and clinical agreements have become key elements to the success of this process of change.

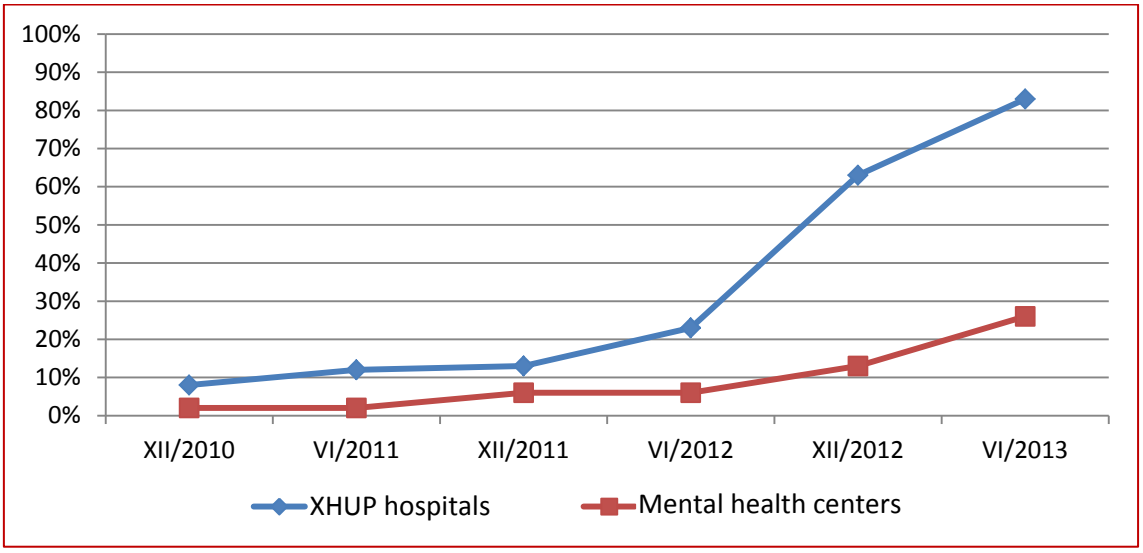
Figure 4.1. Processes for improving resolution in the areas with most frequent relations between primary care and specialist care



The roll-out of the **electronic prescription** in both primary care (implemented in all primary care teams) and in specialist care services (Figure 4.2) accompanies this process and benefits from this framework of a care model that has resulted in agreements between clinical professionals and facilitates the transition of patients between the different care areas and contributes to continuity of care.

The electronic prescription system allows for a comprehensive medication plan for each patient. Some 90.5% of prescriptions issued in Catalonia in November 2013 were electronic. In terms of the expansion of the electronic prescription system to the different levels of care, it is expected that by the end of 2013, inclusion will have been completed in all hospitals of the public hospital network and will have reached 50% of health care centers of the mental health network.

Figure 4.2. Evolution of the expansion of the electronic prescription in the specialist care services (% of centers)



The electronic prescription system allows for an updated **comprehensive medication plan** for each patient, which facilitates **coordination between health care professionals** in the different levels of care and areas of prescribing and dispensing and, therefore, facilitates **improving the clinical safety** of the patient. In this regard, drugs not subsidized by CatSalut are due to be included in the medication plan, together with medication dispensed in hospital outpatient departments. Furthermore, the **electronic prescription for narcotics** has been implemented since February 2013, as the necessary validations that ensure compliance with current legislation have been included in the integrated electronic prescription system.

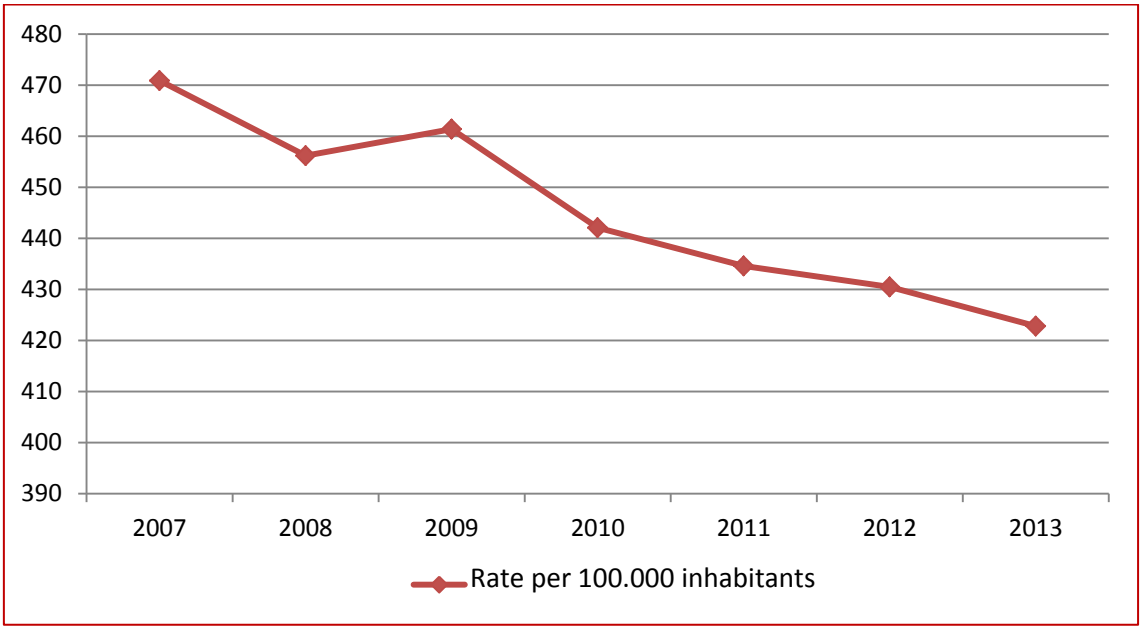
Consolidation of the transformation of the emergency care model.

Prior to 2011, some processes of transformation of emergency care had already been initiated (for example, regional continuous and emergency care in Osona, the development of some primary care emergency centers and greater resolution capacity). With the 2011-2015 Health Plan for Catalonia, this background was key to defining the new Emergency care model. Appropriate responses to the demand for immediate care, which served as the basis for the first phase of reorganizing the emergency and continuous care units and the decided extension of the new model to the entire territory, taking advantage of the process of change represented by the health plan throughout the health care system,.

Demand for immediate care covers situations of different levels of complexity - form emergencies with vital risk to consultations for non-severe problems or problems that do not require immediate attention - and take place with variable intensity at different times. This **diversity of situations also requires different responses**, so that it is necessary to design mechanisms to classify this demand and establish circuits that allow it to be directed to the most appropriate resource based on the need for care of the person affected. The extension of the same **triage** model to hospital emergency services (93% in 2012) has been a key element for correct classification of the demand and for directing it based on uniform criteria for the entire network, and ensuring rapid care for real emergencies or those with vital risk.

The evolution of hospital emergencies shows a clear downward trend in line with the objectives set out by the health plan (Figure 4.3).

Figure 4.3. Evolution visits to hospital emergency services



The **Medical Emergency System** (SEM) plays an essential role in resolving the demand for immediate care, in coordination with the different emergency care units. In 2012, the new **061 CatSalut Respon** platform went into service; this platform makes it possible to centralize all calls relating to health and works with the rest of the system to ensure the care continuum at all levels via different tools, such as the Catalan Shared Medical Records, and adapt the care routes developed in the framework of the program for the prevention and care of chronicity to each region. This innovation is gradually providing greater capacity to assign the most appropriate resources. In fact, in 2012, more than 45% of incidents attended via this platform were resolved with health advice and did not require mobilization of resources. The overall response to incidents that do require mobilization of resources has improved, and 92% of vital risk situations were attended in under 20 minutes.

Emergency care through the activation of the specific **codes** (acute myocardial infarction, ischemic stroke, polytrauma, etc.) continues to improve treatment and survival of the people affected. Activations of the codes by the SEM increased by 3% in the past year, improving the time elapsed between detection of the problem and application of the appropriate treatment. In 2012, activation of the polytrauma code (PTP) was extended to practically all severe trauma patients, both adults and children, which involves 50 centers in Catalonia. The SEM has received more than 5000 activations of the PTP code.

The implementation of the **minimum basic set of emergency data** (CMBD-UR) makes it possible to better understand the reasons that lead to the demand, the sociodemographic data of the patients, classification by level of triage and care flows. The main reasons for pediatric consultations in hospital emergency services are related to respiratory disease and in adults, to injuries and intoxication (Table 4.1).

The initial data of the CMBD-UR have shown that 64% of hospital emergencies are conditions without vital risk or non-urgent health problems that can be treated in non-hospital emergency units (Table 4.2).

This information, which is already available in preliminary form for the first half of 2013, will make it possible to carry out the **second phase of implementation of the model, which is more qualitative and has more to do with clinical management**, evaluating the correspondence between levels of complexity of the demand and the type of care units and styles of clinical practice to provide an appropriate response to this diversity.

Table 4.1. Main reasons for emergency consultations January-June 2013

Group of diagnostic categories	Children 0-14 years (%)	Adults > 14 years (%)
Injuries and intoxication	15.3	23.2
Musculoskeletal and connective-tissue diseases	3.1	12.0
Respiratory diseases	35.6	13.3
Symptoms, signs and other conditions, and factors that influence them	17.9	16.0
Nervous system and sense organ diseases	10.7	6.4
Genitourinary diseases	1.8	5.1
Vascular disease	0.2	3.2
Digestive diseases	7.0	7.3
Complications of pregnancy and post-partum complications	0.0	0.9
Mental disorders	0.3	4.9
Diseases of the skin and subcutaneous tissue	1.7	2.3
Residual unclassified codes	1.0	2.1
Infectious diseases and parasites	5.1	2.5
Endocrine, nutritional and metabolic diseases and disorders	0.1	0.5
Codes not attributable to any category	0.0	0.0
Tumors	0.0	0.1
Diseases of the blood and hematopoietic organs	0.1	0.1
Conditions arising in the perinatal period	0.1	0.0
Congenital disorders	0.1	0.0

Source: CatSalut. CMBD-UR (January-June 2013)

Table 4.2. Distribution of emergencies by triage level. January-June 2013

Level of Triage	% of Cases
1 – Immediate vital risk	1.7
2 – Foreseeable vital risk	4.9
3 – Potential risk	29.4
4 – No vital risk	50.6
5 – Non-urgent	13.3

Source: CatSalut. CMBD-UR (January-June 2013)

Regional organization of services portfolio by level of complexity

The first-level health care services, with a broad degree of resolution with regard to the most frequent health problems, with a large volume of activity and not requiring a high level of technological sophistication, are proximity services with relatively diffuse regional distribution. Other services that require a larger population base to guarantee quality and to make use of economies of scale are tributaries of a territorial organization by levels of complexity.

Criteria have been drawn up to classify the portfolio of pediatric surgery services with the collaboration and consensus of the clinical professionals, representatives of scientific societies and associations of providers of health care services, and regional implementation of the organization has begun (Panel 4.3). This organization process means evolving from a situation in which there are almost 60 hospitals in Catalonia that carry out pediatric surgery to a new situation with 7-8 pediatric surgery services (integrated care teams) attending the child population in multicenter networks, by means of collaboration alliances.

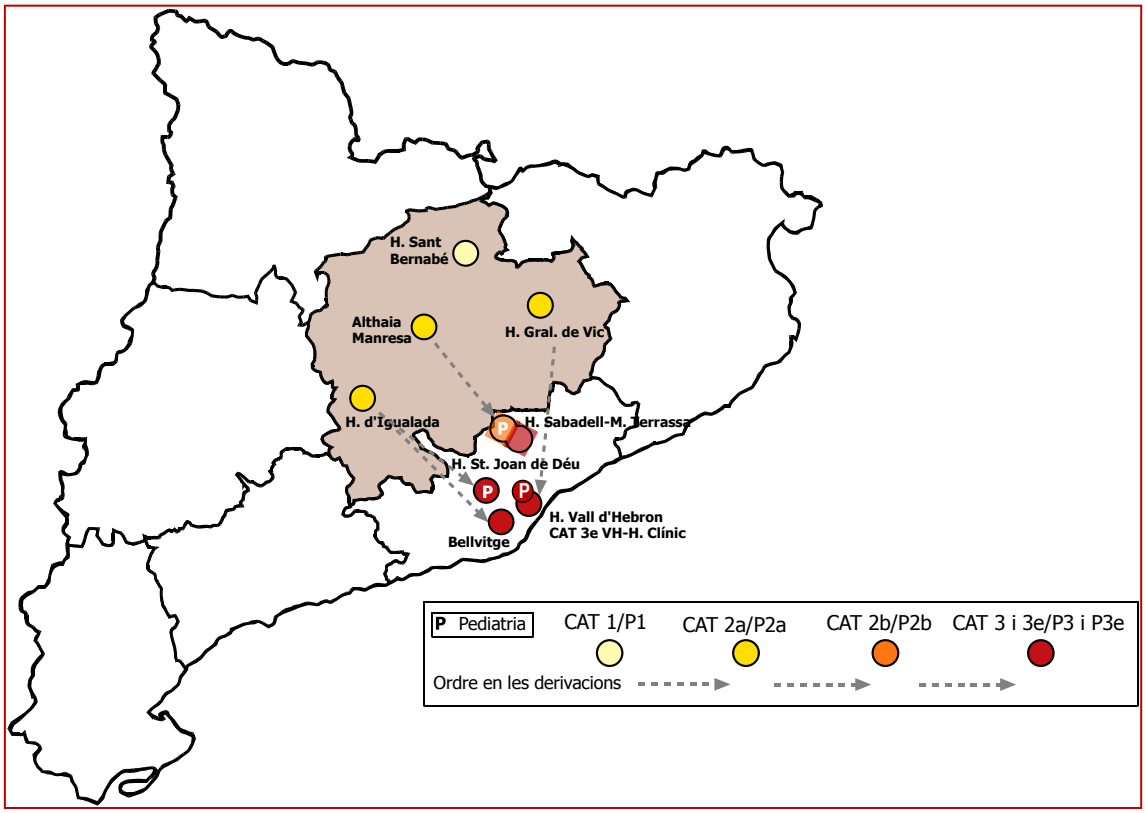
Panel 4.3. Key aspects of the organization of pediatric surgery

- Definition and consensus of clinical criteria with patient-care professionals.
- Identification of 74 categories of procedures (Clinical Classifications Software) particular to pediatric surgery. Number of cases in 2011: 10,293.
- Classification of complexity and type of resolution based on procedures and age groups (< 1 year, 1-7 years, 8-14 years and 15-17 years).
- Requirements for the pediatric surgery team:
  - Specialists in pediatric surgery.
  - Neonatology unit and neonatal intensive care unit if neonatal illness is treated.
  - Pediatric infrastructure to deal with complications (semi-intensive or intensive).
  - Anesthetists with expertise in pediatric patients.
  - Guaranteed emergency care 24 hours a day.

Also, by level of complexity and taking into account the structural and organization needs of the centers, initial care of patients with severe or multiple trauma has been organized and a care network organized by levels and sectorized has been set up to facilitate the relevant flows in the activation of emergency codes, when required, and

provide care in the most appropriate location. Map 4.1 shows an example of the organization of flows in the Catalunya Central health care region.

Map 4.1. Care points and flows in relation to severe trauma patients. The Catalunya Central health care region as an example



At present, work is being done with professionals to define the criteria for classifying **vascular surgery** by level of complexity. Regional organization in this case has two aspects: the caseload classified as highly or very highly complex, care of which follows the logic of the organization of high specialization (Chapter 5) and the demand for low- and medium-complexity processes, in the same specialty, which may have a more diversified network of centers, taking into account minimum levels of economies of scale and guaranteeing appropriate levels of quality and accessibility in terms of time.

Integration of public health and the community in the care model

The actions of the public health care services portfolio focus on activities that affect determining factors, the causes and the risks for health of the most prevalent health problems. In the context of the roll-out of the Catalan Public Health Agency, the specification of the **portfolio of public health services** is in its final stages, with components of health protection and promotion, prevention of disease and health surveillance (Panel 4.4).

Panel 4.4. Definition of the Portfolio of Public Health Services

Health protection	Activities and services aimed at ensuring that food products are safe and that the physical, chemical and biological agents in the environment do not adversely affect our health.
Health promotion and disease prevention	Activities and services aimed at promoting the health of the population, particularly stimulating healthy lifestyles, and actions aimed at preventing specific diseases.
Drug dependency and mental health	Planning, promotion and prevention in different areas (education, family, leisure, health, the workplace and the community), in control of alcohol consumption and the use of other drugs, as well as prevention and promotion in mental health.
Surveillance of public health	Activities and services that detect very specific health problems in people and populations, such as communicable diseases, food-related infections, toxic outbreaks and new health problems.
Food safety	Activities evaluating the risks and benefits relating to food, support for planning risk management and communication of benefits and risks.
Occupational health	Advice, technical support and training for public health professionals and occupational-risk prevention services, and management, control, inspection, monitoring and evaluation actions in the area of occupational disabilities, technical inspection tasks, arbitration, advice and reporting.
Communication, promotion and support of public health	Information and advice on public health, drafting and standardization of health care related documents, as well as educational campaigns for the health of the population and specific risk groups.
Coordination, cooperation, collaboration and web links	Coordination, cooperation and collaboration on health care and web links with the Catalan, national and European health care authorities, other areas of the Catalan government, institutions and organizations, and forums.
Teaching and research	Advice in the areas of teaching and research, participation and teaching actions, promotion of applied research and innovation among the professionals.

The consolidation and reinforcement of the scope of action of public and community health, and the articulated interaction with the other care areas will lead to improved adaptation of the levels of intervention in terms of cost-effective added value, and will improve resolution in the system as a whole. In the **CatSalut contracts with the primary care teams** (the main agents dealing with community care from the health care services), we have included **objectives linked to health promotion and community action**, in accordance with the priorities of public health policy and detection of needs at local level.

There are successful experiences in community action that provide an example of the coordinated action in the territory (Panels 4.5 and 4.6). Furthermore, it has been seen to be necessary to define the model of building community networks to contribute to an effective operative development throughout the country.

Panel 4.5. Community health experience in promoting healthy lifestyles

"Health, school and community" plan in Vilafranca

Catchment population

39,035 inhabitants.

Objective

- Promote a healthy lifestyle in childhood and youth, as a present and future opportunity.

Description

- In Vilafranca del Penedès, the creation of a local network has been encouraged to promote the plan "Salut, escola i comunitat" (health, school and community), aimed at the educational community (students, professionals and families).
- A catalog has been designed that contains the health-promotion resources contributed by the different agents involved in the region (Health Service and Drugs Plan of the municipal council, Territorial Service of the Department of Education, Alt Penedès primary care-pediatrics team and Vilafranca child and youth mental health center, health care sector of the Catalan Health Service, Community Relations Office of the Department of the Interior, Sant Joan de Déu Mother and Child Hospital and Territorial Team of the Catalan Public Health Agency).
- To ensure accessibility and facility of use, the principals of the single window and online processing of formalities have been applied by means of a common channel on the municipal procedures website, where these resources can be requested from the educational environment at the start of the school year.
- This system, initially established for the 2013-2014 academic year, is scheduled to be repeated every year by means of annual updating and distribution of the catalog. A control has been included based on a monitoring survey on the same website.

Results

- The experience is in the implementation phase.

Source: The catalog of resources on the municipal website; Formula for requesting resources

Panel 4.6. Experience of including the health perspective in neighborhood development actions

"Health in the neighborhoods" program in Gavà

Catchment population

Serra de les Ferreres is an area of the municipality of Gavà and consists of two neighborhoods far from the center, with a population of 1034; it is a particularly disadvantaged area with problems of housing and access to resources.

Objectives

The Salut als barris (health in the neighborhoods) programs began with the creation of a local team made up of representatives of the municipal council, care services and public health. Workshops were then held with different professionals (education, youth, community pharmacy, security forces, etc.) and workshops with the community, with the aim of identifying the health needs and assets of the municipality. Based on these data, the local team establishes actions to deal with the needs while taking the assets into account.

Description

- The health in the neighborhoods program was implemented in this town, coordinated by the Catalan Public Health Agency, which provided the first phases of an inter-sector, transversal community health process.
- It has involved health care professionals (primary care, public health, specialist care, drug addiction and mental health), from the social services, tertiary-sector organizations, pharmacists, and neighbors from neighborhood organizations, in the detection of needs and the proposal of actions through two nominal groups and a workshop for the neighbors.
- The proposed actions were prioritized by the team of institutional managers in a meeting in February 2012. Two actions were prioritized:
    - Implementation of the health, school and community plan, led by the municipal council and the territorial team of the Catalan Public Health Agency.
    - Creation of a platform with the participation of the neighbors to propose a community approach to the Ca n'Espinós neighborhood and improve quality of life there.
- Since February 2012, work has continued on these two priority action, in two working groups jointly led by the municipal council and the Catalan Public Health Agency.

Results

- The experience is in the implementation phase.

Source: Gavà neighborhood plan blog.; "Health in the neighborhoods" in Gavà

Of note is the **role of the pharmacies in their community aspect**, with an evolution toward new formulas that incentivize the services of community pharmaceutical professionals, including the provision of care services that contribute to the correct clinical monitoring of patients. The procedure for including services contracted by the Catalan Health Service was agreed with the pharmacists' association council. Thus, an innovative portfolio of community pharmacy services is being created in areas where the contribution can be more effective, such as the service for the early detection of bowel cancer and the service for determining the risk of HIV infection via a rapid test, with an agreement signed on 26 March 2012 (Panels 4.7 and 4.8). In connection with the line of action on chronicity (Chapter 3), a series of actions have been identified that can be carried out through the pharmacy offices and so work is currently under way on the **Program on drug-therapy monitoring with personalized dosage systems in complex chronic patients and patients with advanced chronic disease from the community pharmacy**, which is based on the guidelines on drug-therapy monitoring with personalized dosage systems, drawn up by the Catalan Ministry of Health and the

Council of Pharmacists' Associations of Catalonia, which protocolizes the service, and on the framework document on prevention and care of chronicity from the community pharmacy.[1] The protocol of the study of prevention and care of chronicity with a personalized dosage system is being evaluated in order to allow the pilot study to begin.

Panel 4.7. Experience of the service for early detection of bowel cancer

Collaboration of the community pharmacy in the early detection of bowel cancer

Regional scope

Barcelona health care region (catchment areas of Hospital Clínic, Hospital del Mar and the Catalan Institute of Oncology Hospital Duran i Reynals). Girona health care region (basic health care areas of Toroella de Montgrí, La Bisbal d'Empordà and Palafrugell).

Objectives

- Provide information to users about the program.
- Ensure the issue of sample collectors for collecting samples of feces and information on the process of obtaining and returning the sample.
- Ensure the logistics of the samples.

Participants

- 358 pharmacy offices.

Results

- Barcelona city 2012 (catchment areas of Hospital Clínic and Hospital del Mar).
  - Invitations: 131,143.
  - Participation: 62,828 (47.9%)
  - Lesions detected: 963 high-risk adenomas, 46 invasive cancers.

Source: CatSalut. Pharmacy and Drug Management. Health Channel. Program for Early Detection of Bowel Cancer. Program for Early Detection of Bowel Cancer in Barcelona.

[1] *Prevention and care of chronicity from the community pharmacy.* Catalan Ministry of Health, CatSalut, CCFC.

Panel 4.8. Experience of the service for determining the risk of HIV infection by means of the rapid test

Collaboration of the community pharmacy in determining the risk of HIV infection by means of the rapid test

Regional scope

Several municipalities in the health care regions of Barcelona, Camp de Tarragona and Catalunya Central.

Objectives

- Make early detection of HIV accessible to groups with risk behavior who do not tend to use the public health care network regularly and reduce the delay in diagnosing HIV infection.
- Attend users who request the test and identify possible risk practices.
- Notify the results of the test and inform and make recommendation accompanies with the issue of health care educational material published by the Catalan Ministry of Health.
- Offer advice and referral to a specialist center.

Participants

- 47 pharmacy offices.

Results:

- April 2012 - April 2013:
  - 1356 tests performed (24.5% women; 75.4% men)
  - 11 positive test results (3 men; 8 women).

Source: CatSalut. Pharmacy and Drug Management.

Key elements for implementing the projects

The process of changing to an integrated and more accessible system with a greater capacity for resolution from the first levels involves mobilizing a large number of professionals, as these are projects that affect the whole of primary care, the specialist care services in the priority areas, the services that attend emergencies, the community agents, etc.

Therefore, the implementation of these projects is complex - even more so if we consider that they are based on the dynamics of relations between professionals, between units and between care levels. None of these projects can be taken on by a single team of line of service; it is therefore necessary to encourage clinical leadership and generate shared leadership, with the support of the institutions and with a horizon that cannot be short-term, even though, in certain places and circumstances, it is possible to successfully carry out advanced experiences of implementation that demonstrate change.

Key elements for implementing projects of change to achieve an integrated health care system that provides greater resolution from the first levels

1. Specify **agreements between professionals** to define the agreed services portfolio, protocols and channels for relations between primary care professionals and specialist care professionals.
2. The precedent of the relations between professionals and levels in **transversal projects** are useful for planning current projects.
3. **Shared leadership** to drive changes.
4. **Involvement of management** to implement the projects and support them.
5. **Authority of the Catalan Health Service** to transfer strategic orientations and facilitate organizational aspects.
6. **Training** of primary care professionals by means of collaboration schemes and training in clinical cases, in order to assume greater resolution. Development of **tools that facilitate clinical decisions and the interrelations between care teams**.
7. **Sharing of clinical information** via the information systems is currently an unavoidable premise for effective collaboration.
8. Establishment of **alliances between centers** to take on the portfolio of services in an organized manner in the different regions, maintain professional skill and excellence and make use of economies of scale.
9. Adapt the **system for contracting and payment of services**.
10. Avail of **aggregate population-based information** in order to be able to evaluate the objectives and efficacy of the agreements between teams and care levels.

5. A system of greater quality and equity in high specialization

What was the purpose?

Health care is undergoing constant evolution and innovation in terms of both knowledge and available technology. Trying to **provide highly specialized multidisciplinary, complex and quality care** is a challenge faced by all the health care systems in our neighboring countries. An appropriate response to this challenge requires careful planning and management of resources.

The current most widespread approach focuses on organizing care by level of complexity and the number of expected cases for any specific procedure, disease or clinical situation. This means concentrating resources and patients, which leads to the accumulation of experience, expertise and knowledge (key elements for ensuring safe, quality health care) and efficiency in the use of expensive technology that is essential for maintaining the sustainability of the health care system, in which we must conserve accessibility and quality. For this reason, the concept of **equality of results**, understood as everybody having the same probability of obtaining a result of the best quality, is of special importance; it means that certain procedures have to be carried out in highly specialized departments and in few points of care in the territory.

The **concept of high specialization** basically covers a set of services that are diverse and highly varied but that do share some characteristics that are common to all:

- Complexity. Understood in its broadest sense, i.e., organizational complexity inherent to the availability of highly specialized professionals, the need for a multidisciplinary approach or the technological and structural complexity associated with the use of heavy and highly sophisticated diagnostic and therapeutic equipment, or the combination of all these elements.
- Concentration. One of the most difficult problems from the point of view of planning and organizing the health care services is that of determining the level of concentration (or decentralization) that the different care resources should have. Thus, the need to establish limits to the expansion of tertiary services within the system constitutes an inseparable part of this definition and concept. The relationship between the volume of cases seen and quality is a gold-standard element in the scientific literature and in the observation of results for highly specialized processes (Table 5.1).
- Cost. This is directly related to the two previous points. On the one hand, the more complex requirements lead to higher costs. On the other, it is also logical that the most expensive resources are those regarding which there is more sensitivity in terms of their rational use within the system. This is also true of those for which the tension regarding the regulation of their expansion is highest. The expenditure directly linked to tertiary care has been estimated at approximately 11% of total public spending on hospitalization, which, for the large hospitals in Catalonia, represents, on average, 2.4 of all admissions.

Table 5.1. Mortality rates in specialized admission processes and relation to the volume of cases seen per center

Procedure	Mean mortality rate (%)	Mean difference between the mortality rate between low and high-volume centers (%)
Coronary angioplasty	1.9	0.2
Pediatric cardiac surgery	7.3	11
Surgery without rupture of aortic aneurism	7.5	3.3
Surgery for burst aortic aneurism	49.8	7.9
Pancreatic cancer surgery	9.7	13
Esophageal cancer surgery	13.9	12
Lung cancer surgery	5.5	1.9
Stomach cancer surgery	10.9	6.5

Source: Halm EA, Lee C, Chassin MR. Is volume related to outcome in health care? A systematic review and methodologic critique of the literature. Ann Intern Med. 2002 Sep 17;137(6):511-20.

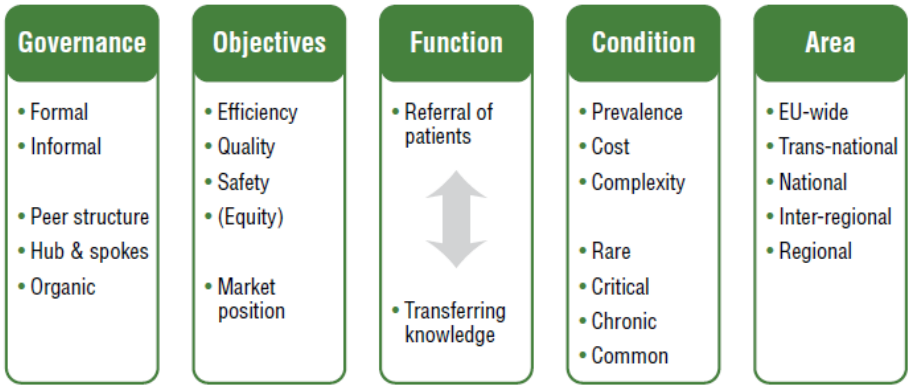
The experiences in our setting that show this process of concentration are frequent. We only need to cite two widely documented and easily consulted experiences:

- The French National Cancer Institute, in the document Centres experts nationaux pour cancers rares de l'adulte 2009–2011, defines the incidence of rare cancer as below 3 cases per 100,000 inhabitants, performs an annual estimation of cases and designates the referral center for the state.

The British National Health Service (NHS) has a website where it is possible to see which are the specialist and reference centers designated for 70 clinical very rare conditions - less than 500 cases per year.

The European Union approved Directive Directiva 011/24/UE of the European Parliament and Council, of 9 March 2011, on the application of patient rights in cross-border health care. This directive establishes a framework for cooperation between member states. A specific area of cooperation that was identified in the directive is the development of European reference networks, including a definition, which has subsequently been developed as a 5-dimensional concept (Panel 5.1).

Panel 5.1. Dimensions for the definition of European reference networks and centers



Source: Palm W, Glinos IA, Rechel B, Garel P, Busse R, Figueras J (Eds.) Building European Reference Networks. Exploring concepts and national practices in the EU. Observatory Studies Series 28; (forthcoming 2013).

In the 2011-2015 Health Plan for Catalonia, these approaches have been reflected in one of the principal lines of action for the transformation of the care model, which have been specified in two concrete projects:

a) Reorganization of high specialization procedures.

b) Harmonization of highly complex pharmacologic treatments

Objectives for 2015

- Guarantee that, for 18 reorganized procedure, 100% of the population is attended in centers that meet the defined criteria.
- Achieve a total of 25 harmonized protocols per year.

Where are we? What has been done?

Reorganization of high specialization

The question of centralization/decentralization of services is not static over time. Historically, the direction of change has generally been the same when this change has been linked to the incorporation of new procedures of technology. Initially, the technology is expensive and indications are few. There are few teams and limitations involved in incorporating new ones. Over time, these factors change: indications increase, the cost falls, it becomes a much more usual practice and its use becomes widespread.

To organize the tertiary services, the Catalan Ministry of Health created the Catalan **High Specialization Services Committee**, composed of members of different institutions (providers, scientific societies, agencies, etc.). The aim of the committee is to analyze, prioritize and propose actions relating to the organization of the provision of highly specialized services, and to determine the instruments required for their implementation and monitoring, in accordance with the criteria of the health care policy

of the Catalan Ministry of Health and the needs of the population. The list of areas of action covered is shown in Panel 5.1

Panel 5.1. Areas of action prioritized in the context of the tertiary-services plan in Catalonia 2011-2014

- Highly specialized oncology:
  - Clinical hematology and bone marrow transplant
  - Third line or subsequent chemotherapy
  - Sarcomas and rare tumors
  - Germ cell tumors and neuroendocrine tumors
  - Pediatric oncology
  - Radiosurgery and full-body irradiation
  - Oncologic surgery for cancer of the pancreas, esophagus, liver metastases, lung, central nervous system, peritoneal carcinomatosis, rectal cancers and stomach cancer.
- AMI code. Centers In operation 24 hours/7 days and 12 hours/7 days.
- Tertiary stroke code/interventional neuroradiology: nodes.
- Treatment of subarachnoid hemorrhage.
- Congenital heart disease and heart transplant in children.
- Congenital heart disease in adults.
- Pulmonary hypertension.
- Epilepsy surgery.
- Surgery to treat Parkinson disease and other movement disorders.
- Cochlear implants.
- Aortic and carotid vascular surgery.
- Genetic counselling.
- Minority diseases: metabolic, cognitive-behavioral and neuromuscular.

In terms of the **methodology** that has been used to deal with the different procedures and/or areas of care, while each case has had its own special circumstances, we can describe the minimum common points, which can be outlines as follows:

1. Definition of the service, procedure or area of care considered high specialization.*
2. Definition of the most appropriate care model and its relationship and continuity with the rest of the health care system.*
3. Definition of the requirements of professionals, including multidisciplinary or technological aspects and requirements in terms of the hospital care environment.*
4. Establishment of a minimum volume that can ensure adequate evaluation of results, based on the literature reviewed and the best available evidence.*
5. Collect and analyze the information on the activity and the results of different centers, sometimes by means of an audit of clinical records.
6. Designate reference centers, based on the previous criteria.
7. Link these reference centers to the population and territory and the rest of the units of the health care system.*

8. Define evaluation by means of monitoring indicators; first, to evaluate implementation and subsequently, to evaluate results in health.
9. Evaluate whether the procedure has its own specific payment system.
10. When, due to the organizational complexity involved, it is necessary to regulate the reference centers, the regions and the other criteria that affect care management and the relationship between centers, CatSalut will use more formal regulatory elements, such as CatSalut instruction (Panel 5.3).
11. Communicate and explain the model and organization established to both professionals and managers of institutions.*
12. Monitor implementation, evaluate results and introduce improvements or changes determined by the evaluation process.*

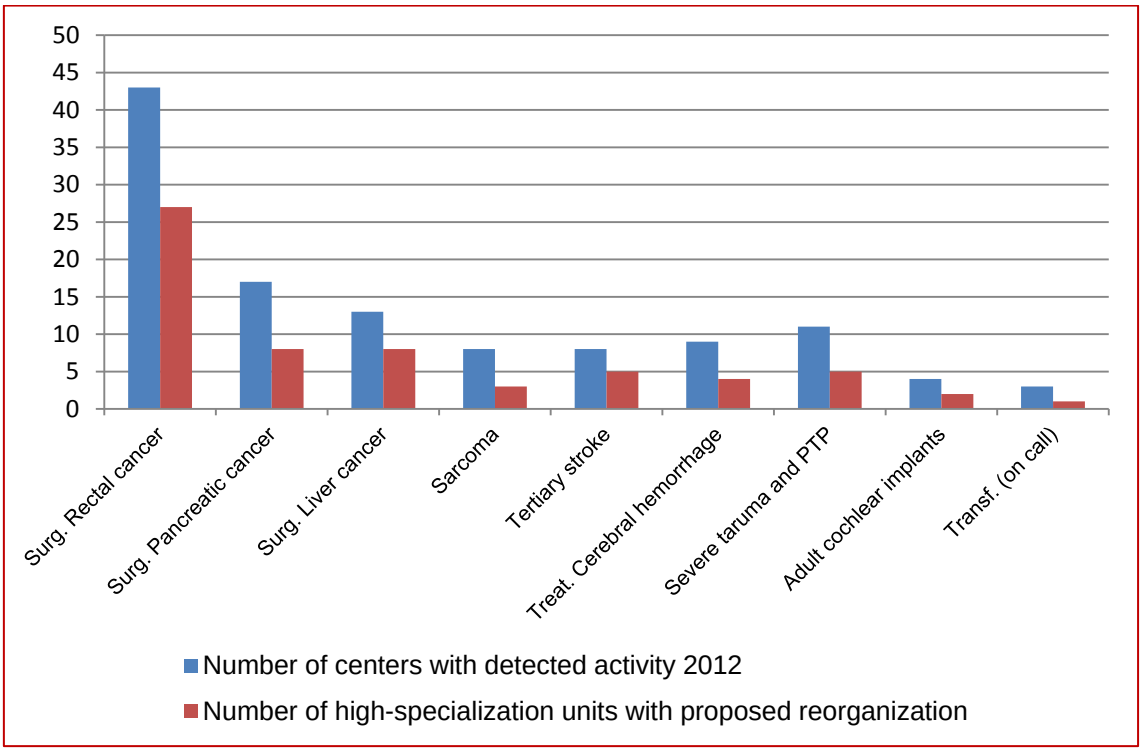
Processes marked with an asterisk could not have been developed without the active and responsible participation and involvement of the health care professionals most closely associated with the specific prioritized areas. In the 2011-2013 period, more than 200 professionals, representing scientific societies, professional associations, institutions and the health care authorities, have taken part.

Panel 5.3. CatSalut Instructions relating to the organization of high specialization

2010	Resolution of 18 October 2010, which creates the High Specialization Services Committee.
	CatSalut instruction 04 of 7 October 2010, on the creation of the drug-therapy program for the harmonization of hospital medicine dispensed in outpatients.
2011	Instruction 04 of 15 November 2011 Organization and configuration of the organizational model and units for the initial care of severe polytrauma patients.
2012	Instruction 01 of 10 January 2012 Reorganization of highly specialized oncologic care.
	Instruction 03 of 22 March 2012 Reorganization of the process of care for patients with pulmonary hypertension.
	Instruction 11 of 16 October 2012 Reorganization of care of congenital heart disease. High specialization services/areas.
	Instruction 12 of 16 October 2012 Reorganization of epilepsy surgery.. High specialization services/areas.
2013	Instruction 01 of 14 February 2012 Organization and configuration of the organizational model and units for the initial care of acute stroke patients.
	Instruction 05 of 18 April 2012 High specialization units (HSUs)

Figure 5.1 shows the change represented by the reorganization of high specialization in some of the procedures and areas of care in which the process has been initiated.

Figure 5.1. Number of centers after reorganization for some areas of care

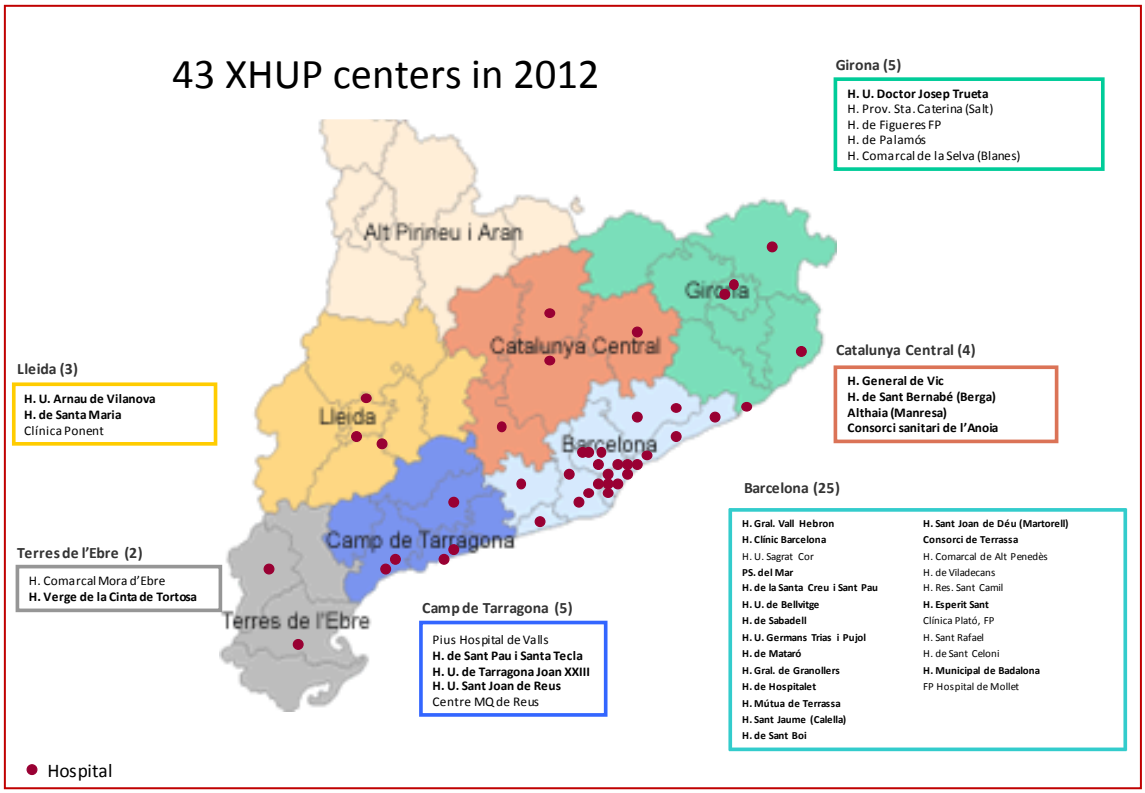


With regard to oncologic rectal surgery, Map 5.1 shows the situation observed in 2012 and Map 5.2 shows the situation to be achieved with the reorganization process. Table 5.2 shows some of the main results of the **evaluation by means of audits** of rectal cancer surgery carried out by the master plan for oncology.

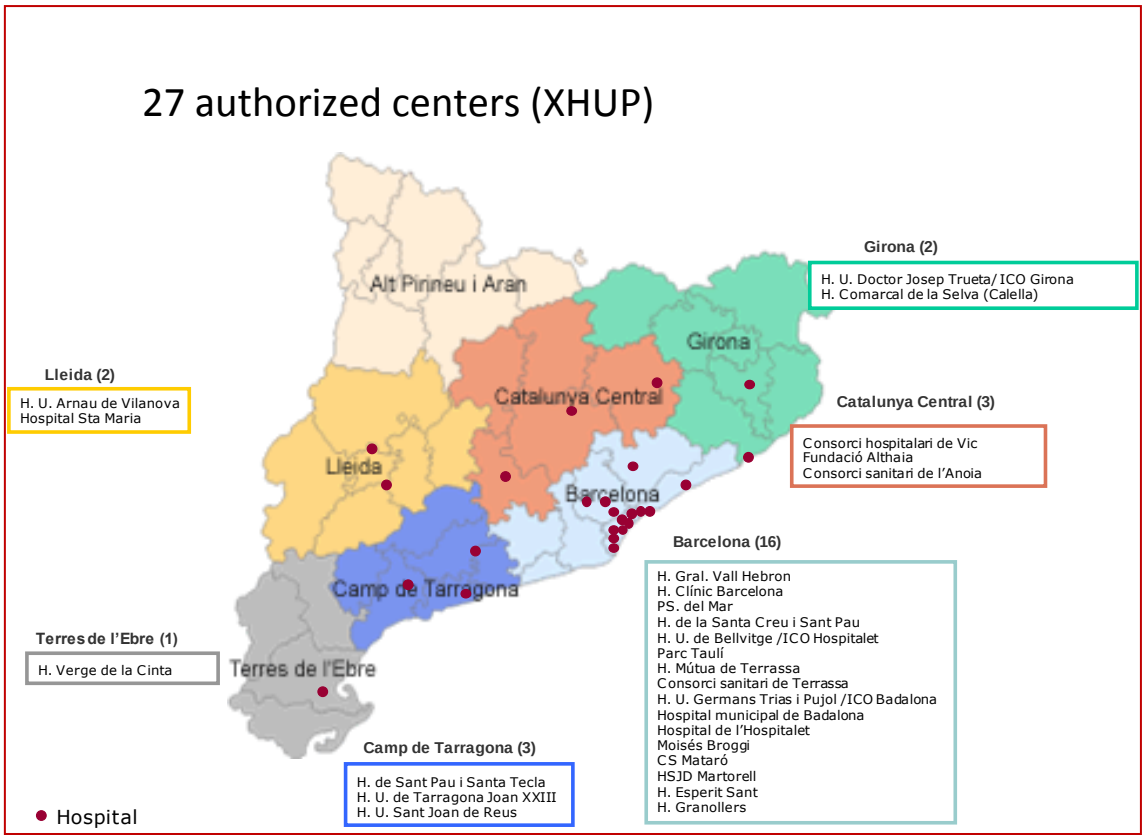
Table 5.2. Comparison of the most important results of the audits of rectal cancer surgery carried out by the master plan for oncology.

	Study period	
	2005 and 2007	**2012**
Cases included	1831	1925
Report on mesorectal resection - anatomic pathology	36.2%	79.5%
Preparatory radiation therapy (stages II and III, excluding rectum/sigma resection)	67.5%	75.5%
Relapse	354%-19.3%	173%-9.0%

Map 5.1. Hospitals in the public health care system with oncologic rectum care 2012



Map 5.2. Reorganization of care of oncologic surgery of the rectum



Another area that has been developed is the reorganization of care of pediatric minority diseases. In this case, the process of drawing up the map of the units of clinical expertise (UCE) was started in 2012, in the initial phase, in which the inclusion criteria were defined with the participation of 10 hospitals. In the second phase, the UCEs will be defined for three groups of diseases. The process has led to the definition of the premises, based on which the working groups made up of professionals of different specialties involved have worked on the UCEs and on the care model; a model based on clinical protocols and clinical practice guidelines for diseases or groups of diseases; on internal multidisciplinary work, with external and internal consultation; and on work in health care networks, with other social and educational networks, taking into account the transition from childhood to adulthood, with the participation of the UCEs in registering minority diseases, in teaching, in research, in work with patient associations and in the use of information and communication technology. The working groups have agreed a care model for each of the three groups and a proposal for UCEs has been made, based on the inherent characteristics of each group of minority diseases, as well as the levels of care for each group of diseases. The transition to adult life will be dealt with at a later stage. In these cases, some UCEs have been identified to act as coordinators of the group (Table 5.3).

Table 5.3. Units of clinical expertise (UCEs) by groups of pediatric minority disease

Hereditary metabolic diseases in pediatric age	• UCE group: HPT, HUGTiP, HUVH and HSJD. • Coordinating UCEs: HUVH-HSJD functional collaborative unit.
Neuromuscular diseases in pediatric age	• UCE group: HPT, HUGTiP, HSCSP, HUVH and HSJD. • Coordinating UCEs: HUVH-HSJD.
Cognitive-behavioral diseases in pediatric age	• UCE group: HPT, HUGTiP, HPSM, HUVH and HSJD. • Coordinating UCEs: distribution by disease ○ Rett disorder: HSJD ○ Angelman syndrome: HPT ○ Noonan syndrome: HUVH ○ Sotos syndrome: HSJD ○ Prader-Willi syndrome: HPT ○ Alternating hemiplegia of childhood: HSJD ○ Velocardiofacial syndrome: HUVH ○ Fragile X syndrome: HSJD, HPT ○ Williams syndrome: HPSM and HUVH ○ Down syndrome: HSJD, HPSM ○ Sex chromosome disorders: HUVH and HPT

HPT: Hospital Parc Taulí, Sabadell; HUGTiP: Hospital Universitari Germans Trias i Pujol, Badalona; HUVH: Hospital Universitari Vall d'Hebron, Barcelona; HSJD: Hospital Sant Joan de Déu, Esplugues; HSCPSP: Hospital de la Santa Creu i Sant Pau, Barcelona; HPSM: Hospital Parc de Salut Mar, Barcelona.

CatSalut has the ability to regulate the organization of the care model in the framework of the public health system, particularly in relation to care areas that cover the whole of Catalonia, such as those relating to high specialization. As well as specific instruction for certain procedures and/or care areas (Panel 5.2), CatSalut has also established a framework of criteria for defining the *high specialization units* (HSUs). This instruction provides references regarding general criteria for quality care by these units, functions,

requirements and requirements of the units and the centers where they are to be located, elements of the evaluation model, research and innovation model, and contracting with CatSalut.

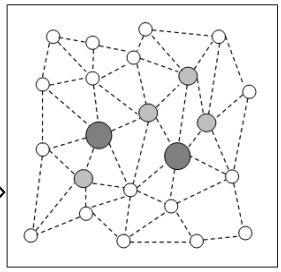
High specialization, as a characteristic element, is a conceptually different thing that exceeds the particular scope of the centers responsible for carrying out this activity. This gives rise to the figure of the multi-hospital HSUs, as a result of strategic agreements between institutions, which make it possible to create multicenter services where quality service can be provided.

The organizational models have to do with the relationship, interaction and connection of the HSUs with the network of county hospitals. We have thus opted for two models, taking into account the different nature of the relationship objectives, as well as critical factors (Panel 5.4). One is a multinodal model and the other is a transversal model, with interconnected centers of excellence.

Panel 5.4. Organizational models of the relationship of the high specialization units with the network of county hospitals

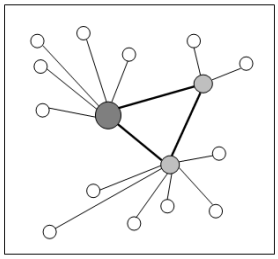
- **Different objectives:**
  - Exchange of knowledge and experience.
  - Concentration of cases: patient referral.
  - Standardization of quality and guidelines.

Transversal



- **Different organization models**

Multinodal



- **Critical factors:**
  - Patient referral
  - Work/professional organization system
  - Type of procedure or treatment
  - Responsibility

Harmonization of highly complex pharmacologic treatments

The range of highly complex pharmaceutical treatments is characterized by a high level of innovation, which leads to the constant appearance of new drugs. In this regard, the health plan recognized the need to achieve harmonization in the choice and use of drugs, in accordance with a framework of actions and a decision-making process that ensure the following:

- Equal access to drugs and treatments.
- Improved levels of efficiency and efficacy, maximizing the level of therapeutic utility.
- Use of resources and sustainability.

The **Program for drug-therapy harmonization of hospital medication dispensed in outpatients** and the **Program for the evaluation, monitoring and funding of highly complex treatments** of CatSalut have been used to evaluate a total of 19 drugs in 2011, 27 in 2012, and 15 to date in 2013. Tables 5.4 and 5.5 show the findings issued by both programs, respectively, since 2011.

Table 5.4. Findings issued by the CatSalut drug-therapy program for the harmonization of hospital medicine dispensed in outpatients from 2011 to the present

2011	2012	2013 (partial)
Certolizumab: rheumatoid arthritis Golimumab: rheumatoid arthritis Lenalidomide: multiple myeloma Mifamurtide: osteosarcoma Raltegravir: HIV in adults Trastuzumab: gastric cancer Ustekinumab: psoriasis	Boceprevir: genotype 1 hepatitis C Bendamustine: CLL Bendamustine: NHL Bendamustine: MM Bevacizumab: L1-mediated colon cancer Bevacizumab: L2-mediated colon cancer Cetuximab: L1-mediated colon cancer Cetuximab: L2-mediated colon cancer Darunavir: Naive HIV Dasatinib CML Imatinib: CML Nilotinib: CML Panitumumab: L1-mediated colon cancer Panitumumab: L2-mediated colon cancer Telaprevir: genotype 1 hepatitis C Vinflunine: urothelial carcinoma	Abiraterone: post-docetaxel therapy prostate cancer Cabazitaxel: post-docetaxel therapy prostate cancer Everolimus: neuroendocrine pancreatic cancer Ipilimumab: advanced melanoma Rilpivirine: HIV in adults Sunitinib: neuroendocrine pancreatic cancer Efavirenz, nevirapine, rilpivirine, darunavir, atazanavir, lopinavir and raltegravir: Naive HIV

Table 5.5. Findings issued by the CatSalut program for the evaluation, monitoring and funding of highly complex treatments from 2011 to the present

2011	2012	2013 (partial)
Ambrisentan: PH Amifampridine: Lambert-Eaton myasthenic syndrome Azacitidine: myelodysplastic syndrome Aztreonam: lung infection due to *P. aeruginosa* Eltrombopag: PIT Everolimus: advanced renal-cell carcinoma Lapatinib: metastatic breast cancer + capecitabine Lapatinib: metastatic breast cancer + aromatase inhibitor Pazopanib: renal-cell carcinoma Plerixafor: mobilization of hematopoietic cells Romiplostim: PIT Tolvaptan: IADHSS	Agalsidase alpha: Fabry disease Agalsidase beta: Fabry disease Alglucosidase alpha: Pompe disease (late-onset forms) Alglucosidase alpha: Pompe disease (childhood-onset) Idebenone: Friedreich's ataxia Belimumab: systemic lupus erythematosus Canakinumab: cryopryn associated syndromes Imiglucerase: type 1 Gaucher disease Imiglucerase: type 3 Gaucher disease Miglustat: type 1 Gaucher disease Trabectedin: recurring ovarian cancer	Review of lapatinib + capecitabine + aromatase inhibitor Autologous chondrocytes: repair of knee cartilage

The **shared-risk agreements** (SRAs) are an instrument for improving the efficiency of public funding of drugs and highly complex, high-cost health care technology. The objective is to **incorporate result-based drug-therapy innovation**, thereby ensuring that new treatments are an investment and not just an expense.

The SRAs aimed at "paying for results" help to regulate some uncertainties (efficiency, safety, budget impact, cost-benefit) of the drugs and distribute the risks among the different agents of the system, making all parties share the responsibility, including the industrial sector for sustainable spending and health results.

The SRAs form part of the new results-oriented payment system, which is being designed by CatSalut to put into operation the policies and priorities of the health plan.

Some experiences are available in Catalonia:

- The SRA on gefitinib for the treatment of metastatic non-small cell lung carcinoma with a specific mutation, signed in July 2011.
- The SRA on certolizumab pegol, a biological drug for the treatment of rheumatoid arthritis, signed in November 2012.
- New drug agreements in the process of negotiation, such as the case of ipilimumab in metastatic melanoma, in which CatSalut formally links the funding mechanism for treatments to results where possible.

Finally, we are finalizing the **Guidelines to shared-risk agreements with the pharmaceutical industry**, which establishes basic criteria and guidelines for making decisions regarding the application of SRAs in the Catalan health care system and, therefore, defining the model for the responsible incorporation of drug innovation linked to results.

Key elements for implementing the projects

In general, it may be said that the recent evolution of the Catalan public health care system, and with regard to tertiary services, it has followed a similar course to that of other countries with health care systems similar to ours. With the 2011-2015 Catalan Health plan, a clear commitment has been made in Catalonia to reorganizing high specialization in pursuit of the best quality of care and guaranteed equal results. This process, however, is not easy and both aspects of the institutional and organizational context and difficulties in managing this change must be taken into consideration. Panel 5.5 shows the most important of these.

Panel 5.5. Key elements for implementing projects of change to achieve a system of better quality and with more equality in high specialization

Strengths	**Weaknesses**
Professionals with a high level of technical and scientific excellence. Strong resolution and response capacity in terms of the efficacy of the Catalan health care system. High level of perceived quality among the population in highly sensitive areas of care. Centers with prestige as state-wide references. Well defined catalog of services and units.	Fragmentation of care. Range of services highly centered on the internal dynamics of the centers or institutions. Variability in accessibility and equality of results. Unsystematic evaluation. Unregulated patient referral. Poorly adapted information systems with deficiencies regarding evaluation of quality and equality of results.
Opportunities	**Threats**
Adapt forward planning in a context of very rapid changes in knowledge and technology. Increase specialization. Adapt the service-purchasing system to the characteristics of high specialization. Strengthen collaboration between professionals and centers - multicenter units. Strengthen the process of evaluation and accreditation. Improve aspects of coordination between levels of specialist care in care areas with low prevalence. Organize patient referral. Introduce multidisciplinary working methods. Reinforce teaching, research and innovation. Implement uniform clinical practice guidelines.	Management of resistance to change by the institutions, centers and professionals, which must be led by the scientific societies and the professionals. Sustainability of tertiary services in a context of considerable change in terms of knowledge and technology, in the context of the current budget restrictions. Pressure from industry to adopt technological innovations, not always with proven evidence. Pressure from professional groups to introduce new modes of diagnosis and therapy.

The current range of public services implemented in Catalonia, based on its strong resolution capacity makes it possible to ensure an effective and generally satisfactory level of response to most of the needs generated in this area of care. The technical and scientific level of excellence with which the services are provided and the quality perceived by the patients are, too, in general terms, comparable to that of our closest neighbors.

Furthermore, in general terms, the referral flows in high specialization broadly follow the expected pattern of regional distribution, consistent with the current organization and implementation of the public hospital network in Catalonia. At the same time, we also see a distribution of resources relating to tertiary services that is characterized by a high level of concentration around the big hospitals in the city of Barcelona and its metropolitan area. The impression exists that the big public hospitals generate and follow their own particular dynamics in this area of activity, often strongly focusing on technological competence and on social and professional prestige. In general, there are few coordination initiatives in the roll-out of more expensive and sophisticated resources and the presence of patient flows not strictly based on health care reasons.

Thus, we can identify the following lines for moving forward:

- Improvement in instrumental elements. Specific information tools will be required, together with powerful systems for evaluating the services in terms, not of productivity or activity, but of results achieved. This refers to, at least, the following points:
    - Establishing a constantly updated catalog of tertiary services using inclusion and exclusion criteria.
    - Establishing a monitoring and follow-up system for tertiary activity (type, source and flows).
    - Establishing minimum acceptable limits in terms of travel time for different procedures.
    - Establishing minimum acceptable limits in terms of waiting lists.
    - Providing information on the results obtained by the centers in relation to tertiary processes.
    - Accrediting potential centers for specific contracting of tertiary services.
    - Setting out explicit criteria relating to the organizational ("internal") needs of the center.
    - Putting in place formulas for coordination between providers for the implementation of tertiary services.
    - Establishing a minimum number of cases related to the availability of a service or equipment.
    - Whenever possible, avoid monopolies in the provision of tertiary services.
- Adopting an attitude of anticipation:
    - Encouraging an attitude much more strongly focused on forward planning and managing derived from the introduction and generalization of new technology and complex procedures.
    - Establishing planning and management of innovation. New technology, techniques or procedures: separate planning and management for each of the phases (introduction and innovation, initial evaluation, dissemination and standardization, etc.).
    - Implement centralized mechanisms for monitoring trends and for prospection.

The two previous points are not possible without the essential **responsible participation and involvement of both the scientific societies and professional groups** in general.

Beyond the overall diagnosis, the main challenge can be stated as the need to achieve **rational and sustainable development of the public health care system** in the context of the benefits and tensions deriving from the incorporation and rapid diffusion of new technology and the trend toward the provision of increasingly costly and more complex services: **concentration of high specialization to ensure quality, the best results and efficiency**.

6. A system more focused on people

What was the purpose?

Health care systems are undergoing processes of restructuring that are essentially aimed at improving efficiency and ensuring sustainability. One of the factors that makes it possible to guarantee quality public coverage is knowing the level of public satisfaction with the services provided. Using proven, valid methodological tools, knowledge about the qualitative evaluation on the part of the citizens allows us to establish policies of continuous improvement in the provision of services.

From the beginning of the work of drafting the 2011-2015 Catalan Health plan in a context of modernizing the Catalan Health Service as the public insurer, strengthening the ability of the citizens to make decisions and choices was considered to be an essential element, taking into account the greater capacity for receiving information and, therefore, being increasingly autonomous and, at the same time, more responsible with the use of public resources.

In a setting that must encourage integrated and networked action by all the health care and health promotion resources, it is necessary to favor actions aimed at maintaining accessibility, quality of the services and optimization of the resources and, in this current setting, this is not possible without the participation of two essential actors: the professionals and the citizens.

The action model proposed by the health plan, oriented toward a greater focus on citizens, is based on achieving **three basic elements**: proactivity of the insurer, transparency and guarantees in the commitments established, and reinforcement of citizen responsibility.

- Implementing a set of actions that facilitate more proactive interaction between the citizens and the public insurer in order to produce an effect of informational transparency that makes it possible to define a model of guarantees with shared responsibilities, with rights of use and responsibilities toward the proactive duties of the citizens.
- Defining communication and relations policies that generate trust, making use of the development of technologies that allow us to increase the level of resolution and proximity to the citizens in a setting of improved management of existing resources.
- Specifying a portfolio of services that is defined by the different levels of coverage of the citizens and establishing an area of regional action by the integrated network of resources that is made available to respond to the health needs of the population.

This model has been developed based on substantiating the following **principles**:

- Increasing the knowledge of the citizens regarding the services and facilities offered by the public health care system, both in terms of content in the portfolio of services (catalog of public services and facilities), in terms of use (usage guide) and in terms of the different modalities (in situ, in network, via telephone, etc.).
- Understanding the risks of the insured population in order to establish prevention and promotion policies against the risk of becoming ill and determining the regional provision of resources using criterial of quality and

efficiency. Furthermore, knowledge of the risk helps to integrate the provision of services and increase the level of patients' responsibility for themselves.

- Knowing the quality perceived by the insurees in the provision of services as an important criterion in evaluating the overall quality of the public health care system. Quality is a key element in the sustainability of the system.
- Developing comprehensive and personalized communication systems that favor a more interactive model of relations between citizens, professionals and the authorities, with the goal of improving the capacity for resolution and the level of responsibility of citizens for their own health.
- Proposing a model of citizen participation that includes the evaluation and expertise of the citizens and patients in decision-making and management of the insurer.

To move forward with this model, development of the actions has been structured in **three projects**, which must facilitate the proposed changes:

a) Improving the knowledge of the citizens regarding the model of relationship with the public insurer (CatSalut) and the services that are covered by the public insurer.

b) Understanding and managing the risk of the insured population of suffering illness, based on analysis of the services provided to the insurees.

c) Guaranteeing the quality of the provision of services, analyzing citizen satisfaction and facilitating the design of a model of citizen participation.

Objectives for 2015

- Ensure that 90% of the population is made aware of who is insuring them and what services the insurance provides.
- Ensure that the entire population of Catalonia (100% of those who have any contact with public health care) have their current risk profile identified, together with its evolution over the previous two years.
- Achieve an improvement of 5% over 2011 in citizen satisfaction with the health care services received.

Where are we? What has been done?

Improving the knowledge of the citizens regarding the model of relationship with the public insurer (CatSalut) and the services that are covered by it

Halfway through the period of the health plan (June 2013), from the Health Care Barometer, we know that 45% of the population states that they know of CatSalut. This is a good result if we take into account the state of development of the project's products, given that most involve an investment in time in the design, creation and implementation, which means that they have not yet been finished or disseminated.

At present the most advanced product is the **positive population-based discrimination programs**, which implement the individual health card (IHC) in Braille

format for all blind people who request it. The "Cuida'm" (take care of me) ICH has also been implemented for people with dementia (for people with a moderate level of cognitive deficiency), severe and profound mental disability, mild or moderate mental disability with behavioral disorders, autistic spectrum disorders and/or brain damage. The objective of the "Cuida'm" ICH is to allow for care that is better suited to the needs of these people, facilitate their relations with professionals and facilitate accompaniment by their family members or caregivers, whenever the clinical situation allows. It has been implemented by means of pilot programs in some centers in the province of Barcelona, starting in December 2012, which will be evaluated in early 2014 in order to implement it throughout Catalonia.

The **Guide to the use of the public health care services**. **CatSalut** will see the light of day this November, once the contributions of the different agents to whom it was submitted have been incorporated; these include the Catalan Patients' Council and representatives of the Catalan Expert Patient program. The guide provides provides information on its website regarding the general way in which the services of the health care system work, and guidance on how to access them correctly and responsibly. It is structured by the different services and facilities, with descriptive information, means of access, conditions of use, types of coverage and aspects of shared responsibility.

In terms of the positioning of the **061 CatSalut Respon** service as a single telephone number for citizens to communicate with CatSalut, this is a long-term product on which specific actions have been carried out to publicize it as the way for citizens to contact CatSalut, in the CatSalut website in the section on the health care regions. Work is ongoing to include this service in information, formalities and procedures, as they are revised, to increase the portfolio of services it can offer to the citizens (Panel 6.1).

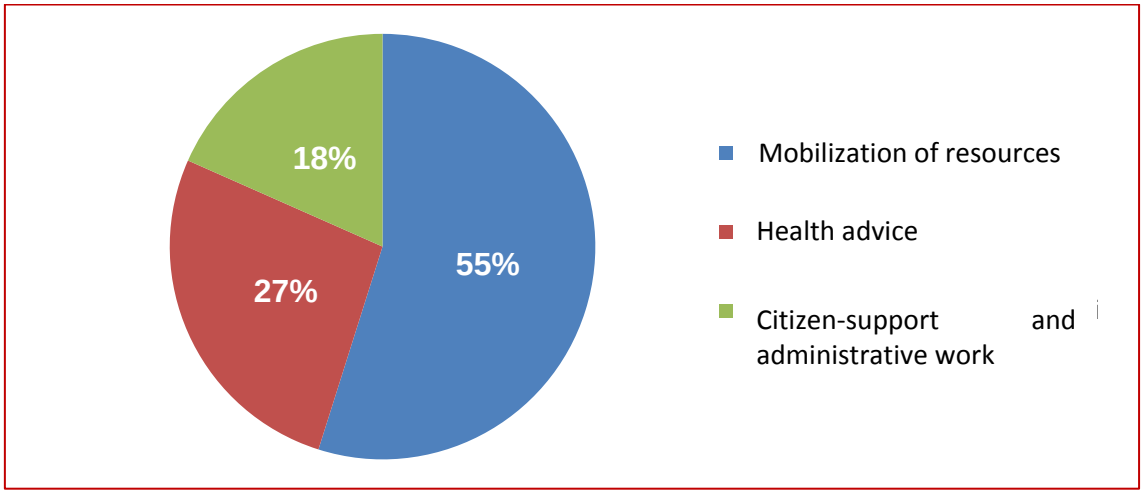
Panel 6.1. Portfolio of services of 061 CatSalut Respon

Provides telephone assistance 24 hours a day, 365 days a year.

- Assistance with health care emergencies.
- Triage and attention to consultations outside the working hours of the primary care centers.
- Monitoring of chronic patients.
- Health advice.
- Advice for travelers.
- Answering queries relating to medication, with advice regarding the drug.
- Information and advice relating to the different health care campaigns (flu, heat waves, etc.).
- Proactive support for citizens ceasing smoking (quit line).
- Information, advice and monitoring in relation to any health care alerts that may occur.
- Insurance and accreditation of citizens, processing applications for the individual health care card (IHC) and information about the levels of coverage.
- Management of the different CatSalut services.
- Accessibility to the health care system, providing broad information on the centers and services of the Catalan health care system.

In 2012, 061 CatSalut Respon attended a total of 1,611,605 incidents and in 2013 (from January to 21 November), it has attended 1,147,185, with 45% of cases resolved without mobilizing resources (Figure 6.1).

Figure 6.1. Distribution of incidents attended by 061 CatSalut Respon, by type of resolution



The catalog of CatSalut services and facilities and the updating of the charter of citizens' rights and duties in relation to health and health care are products that will be worked on throughout 2014.

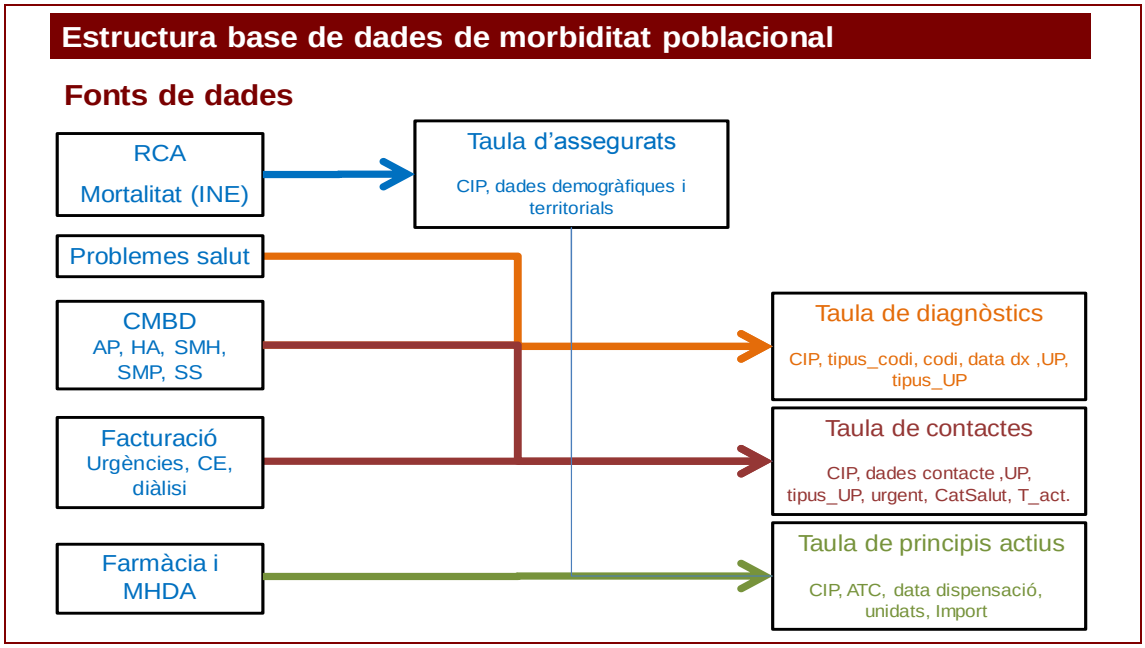
The products of this project are designed centrally and are characterized by being highly transversal and applicable to the entire system and all networks and services. They are therefore strongly conditioned by participation and agreement by the different experts of the system, who are key to ensuring their success. In this regard, the cooperation between the different internal sections of the CatSalut organization and the Catalan Ministry of Health has been and is a determining factor, as is the participation of the bodies representing the providers, professionals, citizens and patients.

Understanding and management of the risk of the insured population of suffering illness, based on analysis of the services provided to the insurees.

In recent years, there has been an increase in the prevalence of chronic diseases in the population, partly due to the ageing of the population and improved health care (better monitoring of diseases, of the specific programs, the Expert Patient program, etc.). This has led to an increase in the life expectancy of the population and to an increase in the number of patients with multiple diseases, who, due to their characteristics, can be considered high-risk or frail. This group of patients represents a small percentage of the population but is responsible for a large proportion of health care spending, as their frailty means that they can easily suffer an exacerbation of one or more of their chronic illnesses and, therefore, generate new contacts with the health care system (emergency visits, admissions and readmissions to hospital, use of diagnostic or therapeutic techniques, etc.).

In the current context, there is a very clear need for a **database that includes the morbidity collected in the different health care information systems** (Panel 6.2), in order to be able to correctly classify patients in different risk groups based on the state of their health and thereby be able to determine specific preventive policies and policies for adapting care so that they help to create a more efficient health care system that is better suited to the different needs of the population.

Panel 6.2. Construction of the population mortality database



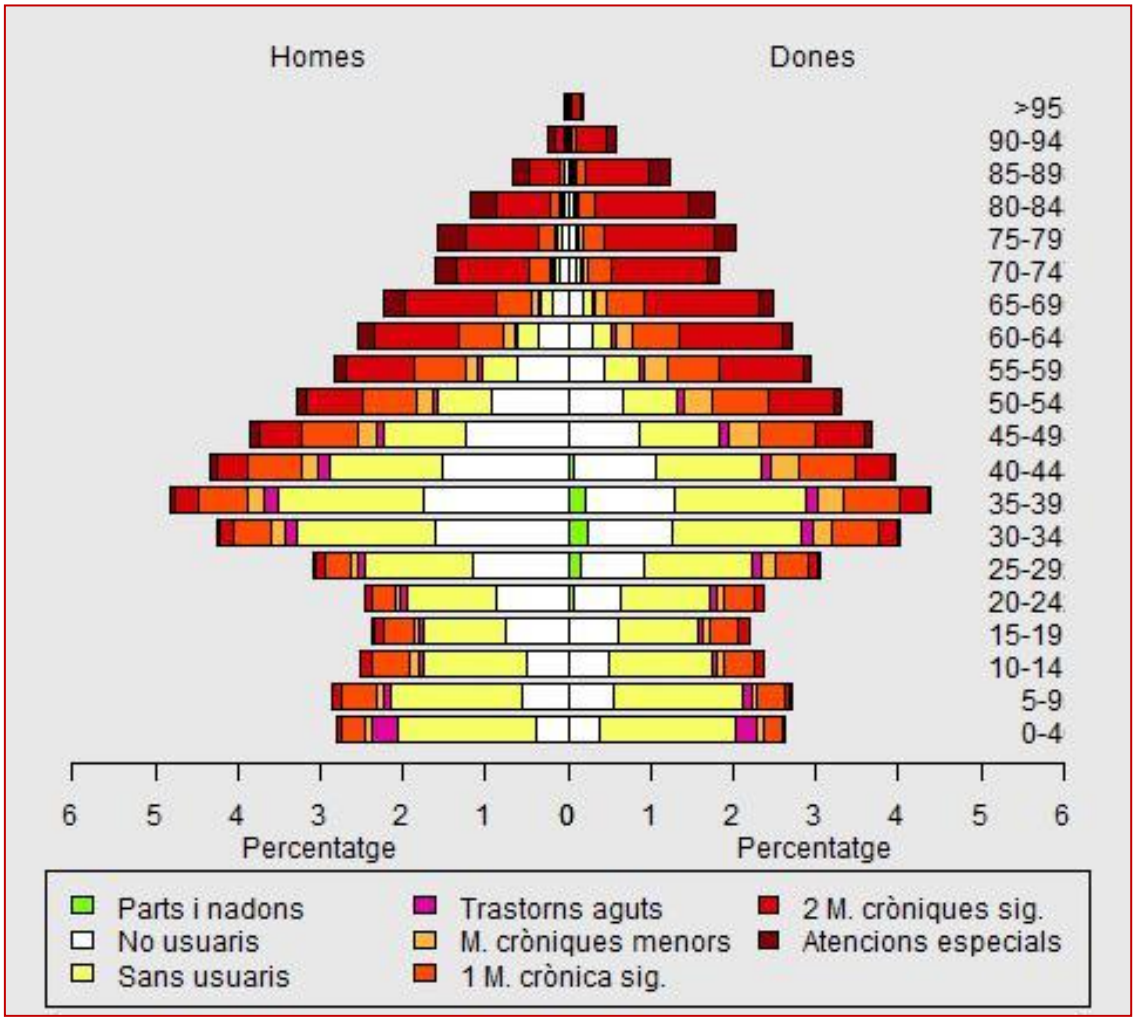
A database of these characteristics has several uses:

- Detecting frail patients or those with special care needs: the existence of the population mortality database must make it possible to characterize/**stratify the group of frail patients**, so that cases can be managed, basically from primary care, to help prevent complications of the diseases and/or admissions to hospital.
- Determining the **incidence and prevalence of specific chronic diseases.**
- Studying the **use of resources** by patients with specific chronic diseases or those who have received a specific treatment. From a more "macro" perspective, it is possible to reference the total health care spending on each user. But it also makes it possible to support more specific studies, such as a study of the efficacy of specific treatments like implanting drug-releasing stents in patients admitted with acute myocardial infarction linked to subsequent compliance with drug protocols.
- **Adjusting indicators** of quality of care. The data from the register of the minimum basic data set are used to calculate batteries of adjusted quality indicators. The adjustment includes all significant and clinically relevant variables available in the register. There is no question that having the aggregate population morbidity data will improve the ability of the different models to adjust.
- Adjusting the **region-based payment system** by morbidity: knowledge of the complexity of the disease attended should allow us to adjust, with better knowledge, the region-based payment system according to the needs of each specific region.

With the work done to date, we can state the following:

1) The combination of multiple diseases and severity, together provide an appropriate stratification of mortality risk and population-based use of health care resources (Figure 6.2).
2) The correct stratification of patients allows us to implement specific preventive policies that help the health care system to be more efficient.
3) The publication and comparison of results is a powerful incentive to improve quality , both in notification and in the care provided.
4) It is necessary to remain somewhat cautious regarding the results before coming to rushed conclusions on the quality of care provided by a specific provider.
5) The exhaustive nature, the quality and the time scale involved in processing the information must make it possible to maintain and improve the morbidity base and perform correct stratification. This will notably improve all the analyses deriving from attended morbidity, risk analyses, identification of frail patients, etc.

Figure 6.2. Health conditions of the population by age and sex



Guaranteeing the quality of the provision of services, analyzing citizen satisfaction and facilitating the design of a model of citizen participation

The satisfaction-survey plan for insurees (PLAENSA) has, since 2003, been providing rigorous information on the satisfaction and quality of service received by people who have been attended in the different lines of service, with periodic results, from Catalonia as a whole, by health care region and, in most cases, by provider of health care services (Table 6.1).

Table 6.1. Overall satisfaction and loyalty results by lines of service

Lines of service	Satisfaction			Loyalty (%)		
	2011	2012	2013*	2011	2012	2013*
Primary care		7.90			90.8	
Hospital care with admission		8.46			91.4	
Emergency hospital care	7.62		7.59	82.8		82.5
Long-term and residential care			8.43			91.9
Outpatient mental health care		7.90			81.4	
Specialist outpatient care	7.82			83.7		
Outpatient rehabilitation			7.96			86.1
Care of pregnancy, delivery and post-partum			8.19			84.6

* Provisional results of 2013 studies.

Source: CatSalut. PLAENSA

The aim of PLAENSA is to be a tool for supporting decision-making for the management and improvement of the health care services, with the intention of having the providers develop projects for improvement in those areas where their results are lower than the overall results for Catalonia. Hence, the information deriving from the PLAENSA results ensures a model of continuous improvement2 of quality led by CatSalut. It should, however, be noted that, in order to encourage improvement projects, it will be necessary to once again include annual objectives in the service-purchase contracts of the providers, linked to user satisfaction.

Furthermore, the information from the PLAENSA studies is included in the reports published by the Results Center of the Catalan Public Comprehensive Health Care System (SISCAT), the mission of which is to measure, evaluate and disseminate the results attained by the different actors who make up the public health care system, presenting nominal results on patient care, teaching and research from the centers, which always include a space for perceived quality. The nominal integrating reports of

[2] PLAENSA makes it possible to identify the most important variables in terms of user satisfaction in each health care service, detect areas of lack of satisfaction that should orient any improvement actions to be taken and, subsequently, evaluate the impact of these actions from the perspective and perception of the users.

the Results Center are in line with the most advanced countries in policies of transparency and accountability to their citizens.

What is innovative is the performance of some tailored studies of PLAENSA, using online methodology in response to the evaluation needs of certain health care providers, thereby preventing duplication of information and encouraging coordination between the authorities and the providers. Nevertheless, this project faces the challenge of guaranteeing the same representativeness, reliability and validity as those being carried out in the PLAENSA studies.

Finally, the Catalan Health Care Barometer has also been carried out since 2009; it polls the evaluation by the citizens (not just users) of healthcare, both public and private, and knowledge about the main actors in the health care system and the actions carried out by the public authorities.

A second area of action that falls within this project aims to **reduce complaints regarding personal treatment**.3 To respond to the established objective, CatSalut undertook a project to analyze and review the management and response procedure that was being used in the system, defining a new protocol that has been implemented in a set of providers with the accompaniment of CatSalut. The central elements are the following: more involvement of the management of the centers and the heads of departments in dealing with complaints about personal treatment and in formulating improvement actions, as well as reinforcing the leadership role of CatSalut as guarantor of quality in the management of complaints. The main limitation of the project is the need for a new technological application that would allow more efficiency in the management of complaints in the service-providing centers and effective follow-up from CatSalut. Table 6.2 shows the data on the monthly variation in complaints about (personal) treatment for the system as a whole.

Table 6.2. Evolution of complaints regarding personal treatment

Comparison of complaints regarding treatment in the first half of 2012 and 2013			
Healthcare region	**2012**	**2013**	**Difference 2012-2013 (1st half)**
Lleida	77	37	−51.9%
Camp de Tarragona	142	85	−40.1%
Terres de l'Ebre	32	28	−12.5%
Girona	121	98	−19.0%
Catalunya Central	82	60	−26.8%
Alt Pirineu and Aran	11	14	27.3%
Barcelona	1547	1223	−20.9%
Not specified	14	17	21.4%
TOTAL CATALONIA	2026	1562	−22.9%

[3] These are negative opinions manifested by the users regarding interpersonal relations with the professionals that have provided care for them in the health care services.

Source: CatSalut.

The third area of action aims to **increase the proactivity of CatSalut with citizens, individually and collectively**. With the aim of integrating the opinion of the insurees in CatSalut and guaranteeing their participation in the health care policies of the insurer, developing the CatSalut participation model, which lays the foundations for the creation of the Insurees' Participation Committee.

In a similar vein, the **Catalan Patient Advisory Board** was established in 2012 as an advisory body representing patients' associations before the Catalan Ministry of Health.

There is also a register of **key informers**, consisting of users who have been voluntary collaborators in exploratory satisfaction studies and who would agree to collaborate again. In this regard, CatSalut will continue to use the help of key informers for the next satisfaction studies.

The last areas of action is the creation of the **Personal Health Channel**. When Canal Salut (the health channel) was published in 2011, an important step was taken toward providing citizens with content based on scientific evidence and backed up by the Catalan Ministry of Health and which allowed them to empower themselves and take care of their own health, together with the knowledge for preventing disease. Now, a much more important step has been taken with the Personal Health Channel, with the aim of increasing transparency and interactivity in the framework of the model of accessibility to the health care services. The Personal Health Channel is an online, personal and nontransferable consultation space that provides personal health information (medication schedule, vaccinations, diagnoses, clinical reports, etc.), which can be used safely and confidentially and which also allows certain administrative procedures to be carried out online. The main limitation of this project, for which an answer is currently being sought, has to do with the level of security required for users to access it.

Key elements for implementing the projects

In the three projects, there are products that are new and require technology and resources that do not currently exist and which have had or will have to be created and provided, which makes it difficult for the goals to be achieved more quickly.

The end users are all the citizens and so, as soon as we have the products finished, maximum and correct dissemination among the citizens and, no less importantly, among the professionals is required. It is therefore essential to have a powerful **communication** campaign, which is key to meeting the commitment to transparency, being proactive, encouraging citizen responsibility and achieving the final objective which, let us remember, is for the population to be aware of CatSalut as the public insurer in Catalonia.

All these mechanisms encourage the bond between the citizens and the authorities, reinforcing the vocation for continuous improvement as a basis for developing and implementing policies and services.

Key elements for implementing projects of change to achieve a system more oriented toward chronic patients

1. **Publicizing**, in a transparent manner, the areas of action and responsibility of CatSalut as the body responsible for improving the health of the citizens.

2. Defining a **model of relationships** for resolving the health problems of the citizens that involves transversal actions coordinated with the health care authorities, health care professionals and the citizens.
3. Promoting **leadership** that guarantees and favors creative processes.
4. Moving forward with strategic orientations that favor the **ability to virtually resolve the demands of the citizens**.
5. Promoting **operations oriented toward action** that therefore produce a change of model.
6. Relying on **new technologies** that facilitate greater autonomy and responsibility on the part of the citizens. Personal health file.
7. Establishing a **communicative environment** that facilitates the transmission of messages that favor the sustainability of the system in a context of guaranteed quality of care.
8. Achieving improvement in the **information systems** in order to facilitate the monitoring and evaluation of new actions.
9. Encouraging the **involvement of management** in order to facilitate the roll-out of the prioritized project and obtaining the consequent results.
10. Promoting the **assignation of resources in accordance with the health needs** of the citizens in a particular region.

7. Health in all policies: interdepartmental commitment

Most of the causes of both health and disease lie outside the health care system, require an inter-sector approach and have to do with policies carried out in departments other than the Catalan Ministry of Health. For this reason, the office of the Secretary of Public Health of the Catalan Ministry of Health is leading the drafting of the **Interdepartmental Public Health Plan**, which embodies this vision and including a focus on health in all policies and all actions of the government. The first version is due this year, with a proposal of specific actions to be put into practice in 2014. The purpose is to facilitate a more appropriate approach to improving the viability of the health care systems and of the social welfare services of the current populations and of the new generations.

Furthermore, it is well known that a very large part of the increase in life expectance seen in countries like the US since the 1950s is attributable to public health strategies relating to nutrition, smoking and other measures, and that investment in public health is linked to a reduction in preventible mortality, especially in countries with limited resources.

International strategies for the prevention and control of chronicity give prevention a key role, as it is only through prevention and health promotion that the goal of increasing life expectancy in good health can be achieved.

Law 18 of 22 October 2009, on public health, establishes that the interdepartmental public health plan (PINSAP), coordinated with the Catalan Health plan, is the basic tool for developing public health actions in Catalonia, so that its proposals are binding for the Catalan government.

The purpose of PINSAP is to "**mobilize and place responsibility on the different areas of government for improving levels of health by acting on its main determining factors, both structural and in terms of life style**".

The main objectives are the following:

- Effectively include health as one of the lines of governmental policy (health in all policies).
- Involve all departments of the government so that they can capitalize on their positive influence on health.
- Improve coordination and promote synergies that lead to increased effectiveness, efficiency and equality of inter-sector policies on health and welfare.

Although the development of PINSAP belongs to the departments of the government (the activities of which have an influence on the health of the citizens) under the direction of the Catalan Ministry of Health, its design involves the participation of local authorities, social and economic agents, scientific societies, professional corporations, institutions and civil society in general.

PINSAP must be understood as a process by means of which health and welfare associated with health become a basic objective of all public policy, so that each of the departments of the government capitalize on the influence the proposed measures and interventions have on the health of individuals and the population in general, and thus take on the responsibility that corresponds to them, as well as contributing to the transversal action of the government and the design of inter-sector policies.

The activities of PINSAP will be carried out in two dimensions:

- Those promoted by each of the departments in the exercise of their responsibility and powers. The Interdepartmental Health Committee, in this case, will analyze the activities and services of each department that have a notable impact on the health of the population, in terms of health promotion and protection, and in the case of joint activities with other departments, those with the main responsibility for managing or coordinating the actions.
- New inter-sector activities on health promotion will also be proposed and designed, particularly in the context of living conditions and other factors that determine health.

The plan also involves new obligations.

Very soon, a participatory process will begin, in which citizens and their associations will be able to add their contributions. PINSAP is not designed to be a static document, but a process that will incorporate new actions every year, and the intention is for this participatory process to continue over time.

8. What do these changes mean for the citizens?

This whole process of transforming the Catalan health care system is aimed at the horizon of the objectives of health and quality of life of the Catalan population. The raison d'être of the health care system is the population; therefore, all these changes must be result in benefits for the people.

Below, we have summarized the expected benefits for the citizens with the process of change that the Health Plan for Catalonia involves.

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Abbreviations

ACUT	territorial urgent continuous care
AQuAS	Catalan Health Care Evaluation and Quality Agency
SRA	shared risk agreements
CAP	primary care center
CMBD-UR	Minimum basic set of emergency data
DM2	type 2 diabetes mellitus
EAP	primary care team
KEP	key elements of the process
CHCS	Catalan health care survey
CHCSc	continuous Catalan health care survey
LE	life expectancy
LEGH	life expectancy in good health
CPG	clinical practice guidelines
HCCC	Catalan Shared Clinical Records
AH	arterial hypertension
AMI	acute myocardial infarction
AMIEST	acute myocardial infarction with elevated ST segment
CHF	congestive heart failure
SSI	surgical-site infection
ACCM	advanced care of chronicity model
COPD	chronic obstructive pulmonary disease
NHS	National Health Service (UK)
NUTS	Nomenclature of Territorial Units for Statistics (EU)
WHO	World Health Organization
BP	blood pressure
CCP	complex chronic patient
SIIP	shared individualized intervention plan
PINSAP	Interdepartmental public health plan
PLAENSA	Insuree satisfaction survey plan (CatSalut)
EPP-CAT	Catalan Expert Patient Program
PTP	polytrauma patient
MRI	magnetic resonance imaging
URCA	unified register of child abuse
SEM	Sistema d'Emergències Mèdiques, SA (emergency medical services)
SISCAT	Catalan comprehensive public health care system
CT	computed tomography
IHC	individual health card
HSU	high specialization unit
EU-15	group of the 15 member states of the European Union before 2004
CEU	clinical expertise unit
HIV	human immunodeficiency virus