

## A. Catalonia World Health Organization Demonstration Project

In 1989, the Health Department of Catalonia (Spain) and the Cancer Unit at the WHO (Geneva) designed and planned a demonstration project for implementation of palliative care resources and services, based on the WHO Public Health Model.

The project's aims were to:

- 1) implement palliative care services throughout Catalonia (cancer/non cancer) and
- 2) serve as a model for other countries/governments

**The objectives of the Catalonia WHO Demonstration Project (WHO DP) were to achieve:**

- public coverage for cancer and non-cancer patients,
- easy access to palliative care by every person who need it,
- equity in access across the region,
- high quality palliative care that is effective and efficient.

The project was initiated at the end of 1990, and evaluated at 10, 15, and 20 years after initiation.<sup>114 115 116</sup> The following section sheds light on the implementation elements and results of the Catalonia WHO project over a period of 20 years.

### Overview

Catalonia is one of Spain's richest and most highly industrialised regions. About 17% of the 7.3 million population is older than 65 years (2009). The life expectancy is 79 years for men and 85 years for women (2010). There are 59,500 deaths per year (2009), chronic conditions account for more than two thirds of all deaths, (35,700 to 44,600 deaths): 28% of all deaths are due to cancer, and 32% to 47% are due to noncancer illnesses. Health care Catalonia is financed publicly and services are provided by a mixture of public and non-profit organizations. Health care resources include hospitals, an extended primary care system, and socio-health centres that care for geriatric, terminally ill, and chronically ill patients by offering rehabilitation, day-care and long-term care.<sup>117</sup>

### Project Implementation Highlights

To achieve the project's objectives, the following elements of the WHO Public Health Model and related activities were implemented:

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<sup>114</sup> Gomez-Batiste et al. Spain: The WHO Demonstration Project of Palliative Care Implementation in Catalonia: Results at 10 Years (1991–2001). *J Pain Symptom Manage* 2002; 24(2): 239-244.

<sup>115</sup> Catalonia WHO Palliative Care Demonstration Project at 15 Years (2005). *J Pain Symptom Manage* 2007; 33(5): 584-590.

<sup>116</sup> Gomez-Batiste et al. The Catalonia World Health Organization Demonstration Project for Palliative Care Implementation: Quantitative and Qualitative Results at 20 Years. *J Pain Symptom Manage* 2012; 43(4): 783-793.

<sup>117</sup> Gomez-Batiste et al. The Catalonia World Health Organization Demonstration Project for Palliative Care Implementation: Quantitative and Qualitative Results at 20 Years. *J Pain Symptom Manage* 2012; 43(4): 783-793.

## 1. Assessment of population needs

Population needs for palliative care were assessed before initiating the project and periodically to inform planning and evaluation of palliative care services. To estimate the size of the populations in need of palliative care services, mortality data and prevalence estimations for chronic conditions in Catalonia were used, assuming:

- A mean duration of terminal status of 3 months for cancer patients and 9 to 12 months for non-cancer patients, and
- That 60% to 70% of the patients dying from cancer and 30% to 60% of patients with non-cancer life-limiting illnesses need palliative care interventions (Optimal direct coverage).

In 2009 the population needs assessment revealed that a total of 20,000 to 31,000 patients with chronic conditions needed palliative care (10,000 cancer patients and 10,000 to 21,000 non-cancer patients).

**Results:** Knowing this information, the planning for palliative care services was modelled within the context of disease demographics, socioeconomics, and health care system structure and resources of each of the 14 districts in Catalonia.

## 2. Restructuring the health services system

For each district, a palliative care service model was developed. The model outlines the levels of palliative care services using various demographic scenarios and proposes ways to integrate palliative care into the conventional health system using resources that already exist in the district. Criteria to access each level/type of palliative care services were described. (See Table 2)

**Table 2 Demographic scenarios and proposals of organization of specialist palliative care services**

Demographic Area	Demography (Citizens, <i>n</i> )	Examples	Conventional Resources	Proposed Model of PC Services
Metropolitan	500,000	3 areas of metropolitan Barcelona (Central, North, South)	University hospital reference + general hospitals + SHCs	Reference PCS (PCU, OC, HST, and training and research) at the University hospitals 2–3 SHCs with units
Urban	200,000	3 urban areas: Girona, Tarragona, and Lleida	University general hospital + 1–3 SHCs	HST + OC in hospital + PCU in hospital and/or SHC
Rural-Urban	80–150,000	16 districts: Osona, Bages, Empordà, and others	District general hospital + SHC	1 HST, 1 HCST 1 PCU in hospital or SHC Preferably as comprehensive system
Rural	<50,000	High Pyrenees	Community hospital + SHC	Comprehensive system with an HST/HCST mixed acting in all levels No PCU needed
Common in all districts: Primary care centers every 20,000 habitants + nursing homes				1 HCST/district/100,000 habitants + 1 HST in every hospital

PCS = palliative care service (including one or more resources); PCU = palliative care unit; OC = outpatient clinic; HST = hospital support team; SHC = social health center (center with PC + intermediate + rehabilitation + long-term psychogeriatric care); HCST = home care support team.  
\*From Gómez-Batiste et al., 2010.

**Results:**

- In 2010, there were 237 specialized palliative care services compared to only 2 palliative care units in acute hospitals in 1989. A typical palliative care service includes: a 16-bed unit, an outpatient clinic, a day unit, and a home care team.
- Palliative care services integrated into all levels of the health care system.
- More than 50% of services are provided in a community setting, nevertheless 83% of hospitals provide palliative care services.
- The number of doctors providing fulltime palliative care increased from 118 in 2001 to 240 in 2010.

**Table 3 Catalonia WHO Project- Palliative Care Services (1989-2010)**

Types of Palliative Care Services	n			
	1989	2001	2005	2010
Home care support teams*	0.5	52	70	72
Palliative care units	1	50	63	60
Hospital support teams	0.5	20	34	49
Outpatient clinics	—	—	14	50
Psychosocial support teams	—	—	—	6
<b>Total services</b>	<b>2</b>	<b>122</b>	<b>181</b>	<b>237</b>
<b>Location of Palliative Care Services</b>				
Hospital	2	31	NA	49
Sociohealth centres	—	39	NA	60
Community	—	52	NA	128
<b>Total services</b>	<b>2</b>	<b>122</b>	<b>181</b>	<b>237</b>
<b>Palliative care beds</b>				
Total palliative care beds		523	552	742
Palliative care beds for AIDS patients		53	NA	NA

**3. Development of a public financing system for palliative services.**

**Results:**

- Palliative care services including medications are offered completely free of charge at the point of care.

**4. Legislation and standards**

- Change/revise legislation and standards governing provision of services to ensure high quality, culturally sensitive, consistent and equitable services to all those in need.
- Revise legislation/policies governing availability and delivery of opioid analgesics to support effective pain management in palliative care.

**Results:**

- Right of access to palliative care became a basic human right in the Catalan Government's Statute on Health.
- In 1990, palliative care services were legislated by a government decree.

- In 1993, the Catalan standards for palliative care services were released. The standards emphasize multi-professional care, advance care planning, continuing care, and case management as essential elements in service provision.
- In 1993, morphine/opoid availability and delivery were promoted by a decree of the Spanish Ministry of Health.

## 5. Training and education of primary health care professionals

### Results:

- Training: About 70% of the primary care professionals received training in palliative care (3.4% up to Advanced/Master's degree, 15.2% intermediate, and 51.9% basic level).
- Education: A total of 423 health care professionals (60% physicians and 40% nurses) earned a Master's degree in palliative care at the University of Barcelona. All nursing schools, 50% of medical schools, and social work courses now include modules of palliative care. Most generalists have a 1-2 month palliative care course included in their training.

## 6. Develop a monitoring and evaluation strategy to drive quality improvement

### Results:

- The activities, outputs, and outcomes of the project have been evaluated periodically over 20 years. The results of 3 comprehensive evaluations were published in the Journal of Pain and Symptom Management.
- The problems encountered during implementation were addressed through improvement actions.

## 7. Promoting research and innovation

### Results:

- Several palliative research and training units were established.
- From 1998 to 2010, five epidemiological studies, three clinical trials, five observational studies and 3 qualitative studies were conducted. The gaps detected through these studies prompted program improvement activities.
- The WHO established (QUALY) observatory, a WHO Collaborating Centre for Public Health Palliative Care Programs, at the Catalan Institute of Oncology to support other countries in the development of palliative care programs as an element of public health element, and to generate evidence and knowledge in the field through research.

## Project Outcomes

- **High coverage (indicating easy equitable access to care)**  
-As of 2010, 100% of the population in Catalonia have access to a wide range of palliative care services that are available in acute care hospitals, socio-health centres, and in the community throughout the 14 rural and urban districts. The 10 and 15

year evaluations also reported high geographic coverage (~ 95%). This indicates easy equitable access to care by anyone who needs it.

-The palliative care coverage for cancer is one of the highest described- (>70%)

-Between 30-50% of advanced geriatric and chronically ill patients received palliative care in their homes or a community setting.

-AIDS patients and children facing a terminal illness have access to palliative care beds designated to them.

- **Majority of deaths occurred at home or in the community**

-60% of the patients who received home care support services died at home.

-Home care support teams treat 50% of the population estimated to be in need for palliative each year.

- **Significant reduction in severity of symptoms**

-On a visual analogue scale, the level of pain reported by 396 patients who received palliative care was very low (the mean basal pain mean was 2.9 and the median was 2.0).<sup>118</sup>

-More than 90% of another group of patients reported improved level of pain after receiving palliative care and 83.2% of the patients in the same group said that their dyspnea was managed effectively.

-The effective control of pain has been attributed to the increase in opioid prescription to patients with late stage cancer.

- **Patients highly satisfied with the care they received**

When asked, patients were highly satisfied with the care they received (the mean satisfaction score for 100 patients was 8.5/10 exceeding the mean satisfaction score of 7.2/10 for other health care services in Catalonia.). Emotional support, providers' communication, and perception of safety were the aspects that received the highest scores.

- **Remarkable reduction in use of acute resources leading to huge savings**

-During the 20 years that followed the project initiation (1990 - 2010) a radical yet sustained reduction in the utilization pattern of acute services resources was observed.<sup>119 120</sup>(See Table 4)

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<sup>118</sup> Gomez-Batiste X, et al. Effectiveness of palliative care services in symptom control of patients with advanced terminal cancer: a Spanish, multi-centre, prospective, quasi-experimental, pre-post study. *J Pain Symptom Manage* 2010; 40:652-660.

<sup>119</sup> Gomez-Batiste X, et al. Resource consumption and costs of palliative care services in Spain: a multi-centre prospective study. *J Pain Symptom Manage* 2006; 31:522-532.

<sup>120</sup> Paz-Ruiz S, et al. The costs and savings of a regional public palliative care program: the Catalan experience at 18 years. *J Pain Symptom Manage* 2009; 38:87-96.

-This resulted in substantial cost savings for the health system: a net saving of 8 million Euros/year in 2005 (at 15 years) and 16.7 million Euros/year in 2010 (at 20 years).

**Table 4 Catalonia WHO Project- Achieved outcomes 2001-2010**

	1989	2001	2005	2010
<b>Needs and Coverage</b>				
Patients needed palliative care ( <i>n</i> )			(~ 20,000 – 31,000)	
Patients received care ( <i>n</i> )		9,000	21,400	23,100
Service Coverage - Geographic area cover (%)		95%	>95%	100%
Service Coverage – Cancer (%)		67%	79%	73%
Service Coverage – Non-cancer (%)		NA	25–57%	31-58%
<b>Resource Utilization<sup>121</sup></b>				
Hospital admissions	63%	16%		
Emergency department use	52%	16%		
Mean length of stay in hospital (days)	12.0	8.0		
<b>Costs and Savings</b>				
Total cost of palliative services ( <i>millions</i> )			€40.3	€52.6
Total savings ( <i>millions</i> )			€48.0	€69.3
Net savings ( <i>millions</i> )		€3.0	€8.0	€16.7
Net savings per patient received palliative care				€690.0

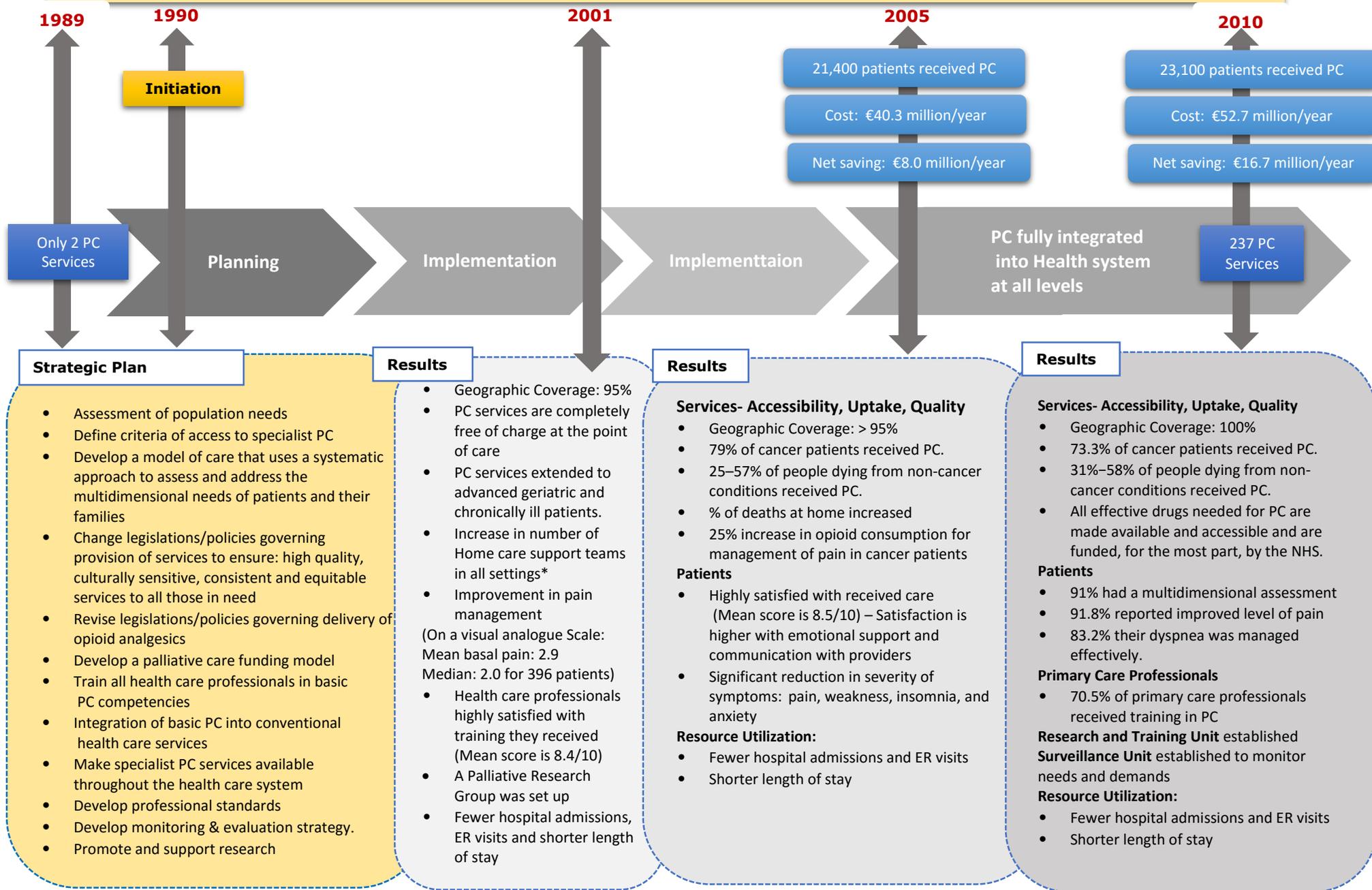
## Conclusion

The Catalonia WHO Public Health Palliative Care Project demonstrated a systematic and comprehensive approach to establishing/integrating palliative care services into a health system. More importantly, the Project provided clear evidence for the effectiveness and efficiency of a whole system model of the public health approach to high quality seamless palliative care that is readily available at all care settings and provided by competent multi-professional teams. Catalonia's experience indicated that shifting the use of acute resources to palliative care beds for treating advanced disease inpatients in a publicly funded and freely accessible health system improves the quality of care at end-of-life, lessens patients' suffering, and generates substantial cost savings for the health system.

## Figure 10 Catalonia WHO Public Health Palliative Care Project: Results at 10, 15, and 20 Years

<sup>121</sup>Serra-Prat M., Gallo P., Picaza JM. Palliative care: a cost-saving alternative evidence from Catalonia. *Palliat Med* 2000; 15:271–278.

# The Catalonia WHO Demonstration Project for Public Health Palliative Care Implementation: Results at 10, 15 and 20 Years.



\*Palliative Care (PC) Support Team includes: Physicians, nurses and allied health professionals in all settings: hospitals, long-term care centres and the community.