

# DRGs in Spain – the Catalan experience

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During the 1980s there were many changes in the Spanish health care sector. The starting point was a fragmented system: a social security system which assured health care coverage only for working and retired people and a combination of mutual and private organizations which also ensured basic care for the rest of the population. The democratic change during the late 1970s led to a health care system with universal coverage based on equity of access (Health Care General Act of 1986). In Catalonia, after the 1981 devolution of health care responsibilities to this Autonomous Community, in 1986 most hospitals were brought together to form a public hospital utilization network (*Xarxa Hospitalària d'Utilització Pública*, XHUP) to enable a single public purchaser to contract health activities for the whole population. Currently, there are two networks, a public one, XHUP representing 73% of total acute care centres and 84% of total beds, and a private one for the remaining 27% of centres and 17% of beds.<sup>1</sup> In Catalonia 24.1% of the population has coverage from both the public and private networks of acute care and health choices are differentiated according to the type of care needed.<sup>2</sup> Private care tends to be primarily used for obstetric services, as many people choose private centres because of the higher comfort and room quality, for elective surgery, to avoid long waiting lists, and for other specialties with no public coverage, like cosmetic surgery and dental care.

## Public health network activities

In the mid 1980s the public health sector in Catalonia was merely the sum of heterogeneous types of organizations owned by different institutions – government, municipalities, sickness benefit funds, religious organizations and mutual insurance companies. The Catalan health authority (which later became the Catalan Health Service, *CatSalut*) was not able to know the types and number of activities bought nor the effect of their reimbursement on the health care system's sustainability. This led to the implementation of tools that were able to define activities and consumption. An information system was created for XHUP hospitals – 60 acute care hospitals with an average of 220 beds – in order to verify that health activities were provided according to adequacy and equity principles. <sup>3</sup> In 1990 it was made compulsory for all public and private hospitals in Catalonia to draw up a Minimum Basic Data Set (*Conjunt Mínim Bàsic de Dades*, CMBD) on hospital discharges with information on acute-care hospitalization activity. In 1995, the Minimum Basic Data Set allowed CatSalut to have enough information about all XHUP hospitals to group discharges with DRG coding systems. The CMBD uses diagnosis and procedure codes, including the ICD-9 CM, the same version that is used for all Spanish hospitals.

## The CMS-DRG System

Until 1997, DRG coding did not play any role in hospital reimbursement. Previously, health care activities were reimbursed according to a 'per contact' system based on Basic Assistance Units (*Unitat Bàsica d'Assistència*, UBA).<sup>4</sup> Each activity was valued as a proportion of the inpatient stay which had a value of 1. Each outpatient surgery and day hospital utilization had a value of 0.75, each emergency contact was valued at 0.50, a first ambulatory visit 0.4 and a follow-up visit 0.2. All other Spanish autonomous communities used a similar reimbursement system.<sup>5</sup> DRG payment systems were first used in Catalonia in 1997. The system introduced for grouping discharges was defined using the CMS-DRG\* coding version.<sup>6</sup> Hospitals receive an amount per case that depends upon the relative mean DRG weight of all hospital discharges, compared to the mean weight of the public network. This hospital-relative ratio is multiplied by a fixed amount which is published annually.<sup>7</sup> Discharge tariffs depend on two specific indicators, the IRR (relative resources intensity) and the IRE (structure relative index). Catsalut sets the discharge prices for each IRR and IRE (IRR and IRE prices) as well as two weighting percentages (See Box 1)

### Box 1 Discharge price calculation

$$\text{DISCHARGE PRICE} = (\text{IRE} * P_{\text{IRE}} * 65\%) + (\text{IRR} * P_{\text{IRR}} * 35\%)$$

IRE and IRR are the main components of each hospital's reimbursement. The value of both prices (Pirr and Pire) has remained almost the same since their introduction. IRE reflects a hospital's structure level, while the level of a hospital's consumption of resources (IRR) is defined by DRG discharge weights coded with CMS-DRG.

## Unfulfilled goals

When it was first introduced, the reimbursement setting structure aimed to gradually reduce the weight of the structure index (IRE) and to increase the resource consumption index (IRR), an indicator of the level of complexity, which should be the main reimbursement driver for Catalan hospitals. However, IRR and IRE weights also have not changed since 20008 (Table 1).

**Table 1 IRE and IRR weighting percentages**

Weights	IRE	IRR
1998–1999	70%	30%
2000–2009	65%	35%

Thus, the goal of attributing even more weight to discharge complexity in the reimbursement formula has not been reached as it is evident that the current weighting (65% for IRE and 35% for IRR) does not provide an incentive for hospitals to seek the best complexity performance. Regardless of the difference in the discharges' DRG weight, the end result is almost the same in terms of reimbursement. When calculating hospital reimbursement, along within inpatient care, major ambulatory surgery (MAS) is included and accounts for some 40% of total surgical activity (37% by 2006).<sup>8</sup> In the Catalan health care system MAS was introduced in 1990, with the objective of optimizing the use of resources and reducing waiting lists. Its use has increased steadily, reaching today's significant levels. The most frequent procedures in ambulatory surgery are cataract surgery, release of carpal tunnel, circumcision, inguinal hernia repair, uterine dilatation and curettage, and arthroscopy. Grouping MAS and inpatient care in the reimbursement system was a political decision taken to give a powerful incentive to set surgery in an outpatient setting as one of the measures to reduce waiting lists, as well as to reduce costs. This has been a great incentive to substitute inpatient surgery with MAS, but this incentive has tended to be over intensive. Thus, the main trend has been an increase in the importance of outpatient settings (Table 2).<sup>3</sup>

## Unintended Outcomes

In the first years of its introduction, this system did not work as expected. The first sub optimal result was that the CMS-DRG American weights used to determine hospital reimbursement were not able to explain cost variability in Catalonia,<sup>9</sup> highlighting the need to define system-specific weight adjustments, and also to promote the development of cost accounting systems to evaluate the per patient cost.

The reimbursement system caused strong incentives to modify clinical strategies within Catalan hospitals. As MAS prices are defined with the same method as inpatient discharges, hospital activities have been oriented to increase the use of MAS. The increase (Table 2) of activity and costs (significantly in outpatient activities) has caused distortions in the financial balance of the health care system due to the lack of information on hospital activities and costs that the DRGs have not been able to capture.<sup>10</sup>

**Table 2 XHUP Hospital contacts**

XHUP	Number of contacts							Variation 01/07
	2001	2002	2003	2004	2005	2006	2007	
Inpatient	734,662	730,060	732,164	733,020	736,493	737,338	764,536	4.1%
Major Ambulatory surgery	104,887	117,115	128,400	144,854	159,434	173,060	183,608	75.1%
Other types of assistance (including day hospital)*	152,604	171,367	184,495	189,549	217,788	234,599	262,623	72.1%
Total	992,153	1,018,542	1,045,059	1,067,423	1,113,715	1,144,997	1,210,767	22.0%

Source: Data elaborated from the Catalan CMBD 2001–2008.<sup>3</sup>

\*Data not exhaustive as part of the variation could depend on changes or improvements in the quality of hospital information provided to the XHUP.

**Table 3 Introduction of DRG systems in Catalonia**

CATALONIA	1st DRG version	2nd DRG version
Date of introduction	1997	2006
(Main) Purpose	Hospital reimbursement	Hospital benchmarking
DRG system	CMS-DRG	AP-DRG modified*
Data used for development	None (i.e. completely imported)	None (i.e. completely imported)
Number of DRGs	520	670
Applied to	Public hospitals, both inpatients and some outpatients (major surgery and high-profile emergencies)	Public and private hospitals

\* The AP-DRG system is a modification of CMS-DRGs. It covers a wider range of procedures and supports other population groups in addition to Medicare beneficiaries.

## Future challenges

There are two main areas to focus on: firstly, the definition of a new weights structure that reflects the costs of hospital activity more efficiently than American DRG weights; and secondly, the development and homogenization of cost accounting systems in order to make hospital information comparable, at least at regional level. Spain chose to adopt the DRG system without any adjustment or modification (Table 3). Therefore, changing to another DRG system or adjusting existing algorithms would be easier than for most European countries and could be done at relatively low cost. In the European environment, only Portugal has maintained the American standard in its DRG system while all other countries have developed their own modified systems. The custom-made DRG weight adjustments that have been deployed in several European countries implies that there is a high degree of non comparability between case mix indicators, thereby reducing the power and usefulness of this tool as a standard for European health care measurements. The Spanish situation shows that current versions of DRGs cannot capture the increasing importance of MAS and other outpatient activities. Therefore, the Spanish Ministry of Health has developed projects aimed at verifying the usefulness of the IR-DRG system,<sup>11</sup> collecting data from participant hospitals that could provide costs at patient level and grouping their CMBDs with the IR-DRG grouper. The objective of this project was to launch a pilot trial to define the cost structures of inpatient and outpatient activities. In the Catalan health care context quality improvement is also a current strategic aspect related to DRG systems. The Alliance for Patient Safety program (Aliança per la Seguretat), a project promoted by the Catalan Department of Health, involving XHUP hospitals, and based on the WHO World Alliance for Patient Safety guidelines, motivated significant changes in quality and safety strategies, moving from a focus on efficiency to improvements in patient safety. This change increased the relevance of DRG systems in quality indicators based on DRG capacity, yielding clinical and management information. Moreover, the EuroDRG project ([www.eurodr.org](http://www.eurodr.org)), which involves some Catalan hospitals, will enable a comparison between European case mix systems and will demonstrate if DRG systems could achieve a European common standard that includes inpatient activity, MAS and other outpatient activity.

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