Pharmacy

Introduction

The health sector is one of the sectors of the economy with the highest level of regulation both within the European Union and in its member states, Spain being no exception. Within the health sector itself, pharmacy is probably the area where public regulation is most intense.

The pharmaceutical service is a basic element of health care both because of its effect on patients' health and because of the importance that this cost has in the overall budget of the health services.

The fact that the pharmaceutical service is so closely regulated is partly due to the problems of equity that would be caused if the market for pharmaceuticals operated as a free market, and the pharmaceutical service depended exclusively on the purchasing power of the consumers.

Regulation is also required from the perspective of efficiency, given that the pharmaceutical market is imperfect in terms of supply (patent protection, publicity in a context of asymmetrical information, etc.) as well as in terms of demand (positive and negative externalities in the consumption of pharmaceuticals, problems of mediation between the prescription writer, the user and the financer, etc.).

This section will analyse the changes in some of the indicators of this activity, in expenditure and health policies associated with pharmacy in Spain between 2004 and 2007.

The pharmacy service is a basic healthcare service in many countries and one of the most important segments in the total spending on health.

The last decade has seen the cost of pharmaceuticals (not including hospital costs) rise in relative terms within the context of the total spending on health in most of the countries of the OECD (Organisation for Economic Cooperation and Development).

Table 47 shows this development. Spain belonged to a group of countries in 1995 (Portugal, Spain and Italy) in which pharmaceutical spending represented a high proportion of health spending, 19.2 % of the total.

From 1995 to 2005, Spain increased the relative weight of spending on pharmaceutical prescriptions, while Portugal and Italy began to reduce it from 2002 onwards. Spain only began to reduce this spending in 2006 and the percentage has dropped from 22.9 % in 2005 to 21.7 % in 2006.

TABLE 47. Evolution of pharmaceutical spending as a percentage of total health spending, 1995-2007

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Canada	13.8	14.0	14.7	15.1	15.5	15.9	16.2	16.7	17.0	17.3	17.7	17.4	17.5
Denmark	9.1	8.9	9.0	9.0	8.7	8.8	9.2	9.8	9.3	9.0	8.9	8.5	-
Finland	14.1	14.4	14.8	14.6	15.0	15.5	15.8	16.0	16.0	16.3	16.3	14.6	-
France	16.0	16.0	16.4	16.9	17.7	18.2	18.8	18.7	16.5	16.6	16.4	16.4	-
Germany	12.9	13.0	13.1	13.6	13.5	13.6	14.2	14.4	14.5	14.0	15.2	14.8	-
Iceland	13.4	14.0	15.1	14.3	13.7	14.6	14.1	14.1	14.6	14.4	13.3	13.1	12.9
Ireland	10.5	10.4	10.0	10.2	10.4	10.6	10.6	11.1	11.6	11.8	10.9	-	-
Italy	20.7	21.1	21.2	21.5	22.1	22.0	22.5	22.5	21.8	21.2	20.1	20.0	19.4
Norway	9.0	9.1	9.1	8.9	8.9	9.5	9.3	9.4	9.2	9.4	9.1	8.5	7.9
Portugal	23.6	23.8	23.8	23.4	-	22.4	23.0	23.3	21.4	22.3	21.9	21.3	-
Spain	19.2	19.8	20.8	21.0	21.5	21.3	21.1	21.8	22.9	22.8	22.9	21.7	-
Sweden	12.3	13.6	12.4	13.6	13.9	13.8	13.2	13.0	12.6	12.5	12.0	13.3	-
Switzerland	10.0	10.0	10.3	10.2	10.5	10.7	10.6	10.3	10.5	10.4	10.4	-	-
USA	8.9	9.3	9.8	10.3	11.2	11.7	12.0	12.4	12.5	12.5	12.4	12.6	-

Source: OECD Health Data, 2008.

Spain was the country with the highest relative spending on pharmaceuticals among those studied in 2003. Meanwhile, in other countries, including Canada, Finland, France and Germany, pharmaceutical spending is moderate, situated between 15 % and 17 %, with some growth in the last ten years, while countries such as Denmark, Ireland, Norway, Iceland, Sweden, Switzerland and the United States have a significantly lower proportion of pharmaceutical spending, ranging from 8 to 13 %.

The evolution of the pharmaceutical service in the Spanish National Health System in the first years of the 21st century has been marked by three fundamental elements: the conclusion of the process of transferring responsibilities for health issues to the autonomous communities which have not already adopted them, with the new financial system which became law on the 1st of January 2002; the Strategic Plan for Pharmaceutical Policy for the Spanish National Health System, which was drawn up by the Ministry of Health and Consumers' Affairs and published in November 2004; and the passing of the Guarantees and Rational Use of Medicines and Medical Products Act in July 2006.

The process of transferring responsibilities has been a stimulus in the managing of the pharmaceuticals service for the whole National Health System, including those autonomous communities which had already assumed this responsibility. The Strategic Plan for Pharmaceutical Policy for the NHS has served as a framework for the development of policies by the regional authorities, and many of its proposals have already been implemented, so that new instruments for the rational use of medicines are being promoted in several autonomous communities.

Finally, the effects of the Guarantees and Rational Use of Medicines and Medical Products Act have been felt in a number of areas of the pharmaceutical service, and some of the regional governments have taken steps to advance them even further.

It is important to note that the initial data used in the analyses presented in this section were provided by the autonomous communities for the creation of this report, and it has been considered that they all include the same groups of medicines, diets, formulae, extracts and other health products in the calculation of the five indicators.

An analysis of the evolution of pharmaceutical spending in the National Health System (2004-2007)

The following is an analysis of the pharmaceutical spending in the NHS and its evolution during the period from 2004 to 2007, which will in turn be followed by a review of the most important policies and measures in the rational use of medicines adopted by the health services of the different autonomous communities.

Indicators

The autonomous communities have provided standardised data on five different indicators for the elaboration of this report, and by studying them we can carry out an analysis of the costs incurred in medical prescriptions by the National Health System.

The lack of standardised data on other aspects of pharmaceutical expenditure, such as pharmaceutical spending by hospitals or in pharmacy offices without prescriptions from the NHS, prevents us from preparing a more complete comparative analysis of spending.

The first two indicators analysed are the total number of prescriptions and pharmaceutical spending. They are both absolute measurements of data, and although they do not allow for a comparative analysis between the

different autonomous communities, they do give an idea of the dimensions of pharmaceutical spending in each community in relation with the national total.

The third indicator is the average cost per prescription and is obtained directly through the two indicators previously mentioned. Finally there are the fourth and fifth indicators, which are partial. They are the proportion of prescriptions which are *generic medicines* prescribed by each autonomous community and the proportion of pharmaceutical expenditure derived from the prescription of generic medicines, which gives us an idea of the impact of these measures for the rational use of medicines and restraint in pharmaceutical spending. The five indicators and their values in each autonomous community are presented in table 48.

Total number of prescriptions: The number of official NHS prescriptions issued in the pharmacy offices (excluding hospitals).

Total expenditure: The cost of these prescriptions once the contribution paid by the user when buying the medicine has been subtracted.

Average cost per prescription: The result of dividing the total cost between the total number of prescriptions.

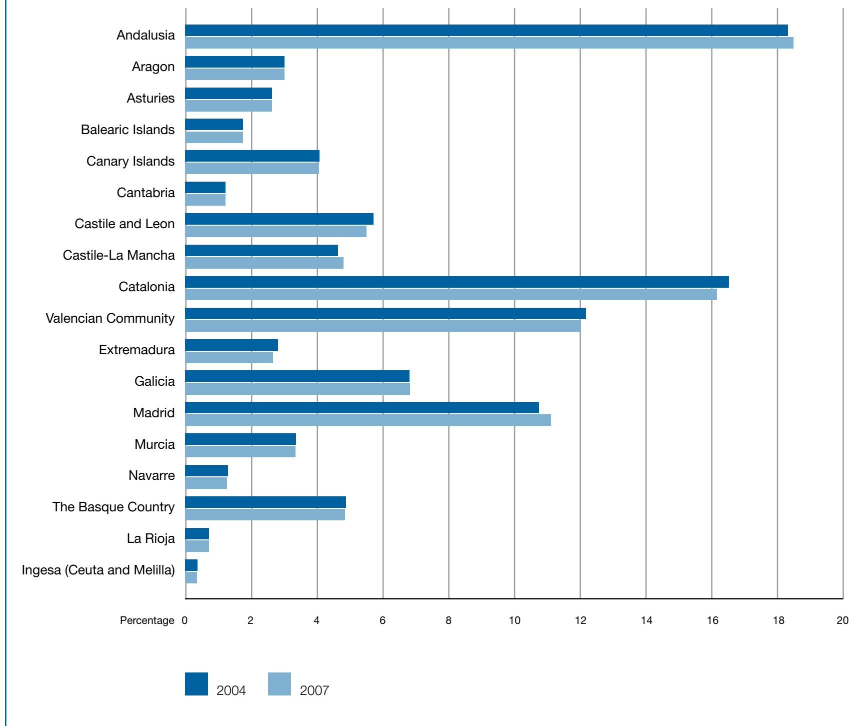
Percentage of generic medicines prescribed (Percentage of these generic pharmaceutical specialities or EFGs): The number of official NHS prescriptions which prescribe generic medicines as a percentage of the total number of prescriptions issued in the pharmacy offices (excluding hospitals).

Percentage of spending on generics (% of EFG): The expenditure represented by official NHS prescriptions which prescribe generic medicines as a percentage of the total expenditure represented by prescriptions issued in the pharmacy offices (excluding hospitals).

The spending on pharmaceuticals associated with the invoicing of prescriptions issued in the pharmacy offices (excluding hospitals) of the National Health System during 2007 exceeds 11,469 million euros, which correspond to 844 million prescriptions. This figure is higher than the 10,799 million euros spent on filling 793 million prescriptions in 2006, and higher again than the 9,752 million euros spent on 730 million prescriptions in 2004. Pharmaceutical spending has increased in the period 2004-2007 by 17.6 %, while the number of prescriptions has risen by 15.67 %. This means that the average spending per prescription in the National Health System has grown from €13.36 in 2004 to €13.58 in 2007, which represents an increase of 1.67 % in three years.

The total number of prescriptions is an absolute indicator and therefore tells us of the volume of activity in the pharmacy offices of each autonomous community, and reveals the specific weight of each autonomous community in the global calculation of prescriptions in Spain (fig.14). Even so, this

Figure 14. Relative importance of the number of prescriptions in the autonomous communities, 2004-2007



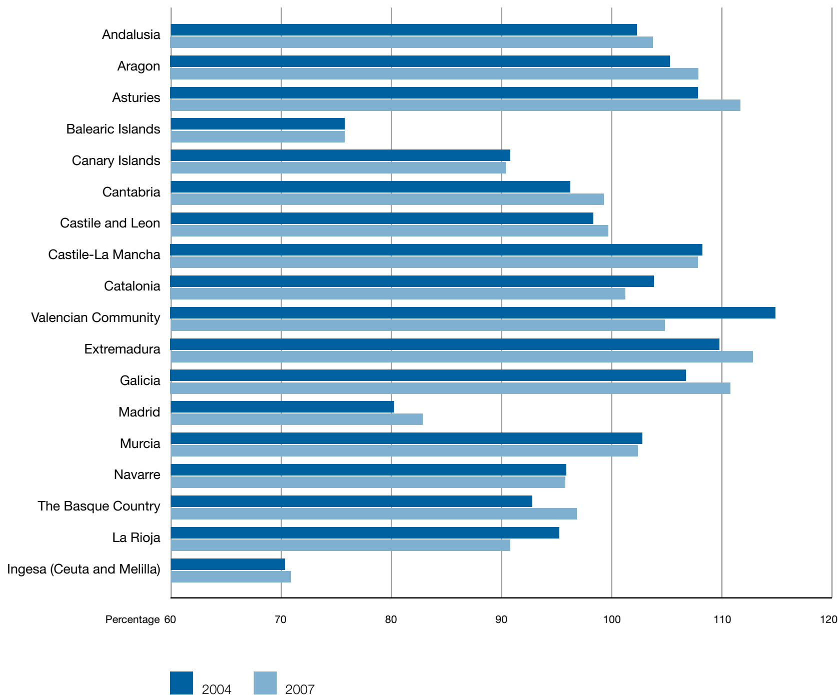
indicator does not provide information on the achievement of objectives in the rational use of medicines as it provides no data on the needs for which the medicines are prescribed.

It can be seen that the communities with the greatest percentage of prescriptions are Andalusia, Catalonia, the Valencian Community and Madrid.

Figure 15 shows which autonomous communities have a *number of prescriptions per person*[43] which is higher or lower than the national average, given as 100 %. We can see from this that there have been changes as regards

43 The data used in this calculation were provided by the National Statistics Institute, which means the population from the census of the 1st of January 2004 and 2007. It is not data on the population covered by the service.

Figure 15. **Relative importance of the prescriptions paid in each community, corrected according to the official population figures of each, 2004-2007**



Source: National Statistics Institute. Population census of the 1st of January 2004 and 2007.
Data does not correspond to the population covered.

the communities with the highest number of prescriptions per patient. In 2004, the Valencian Community issued the greatest number (115 %), but in 2007 this amount of prescriptions per person had dropped to a level far closer to the average 105.21 %). In this same period, Galicia, Extremadura, Asturies and Aragon have moved away from the national average and form, together with Castile-La Mancha (with a stable indicator), the group of communities with the highest number of prescriptions per person (more than 8 % above the national average). At the other extreme, Ceuta and Melilla (70 % in 2004 and 71 % in 2007), the Balearic Islands (76 % in 2004 and 2007) and Madrid (80 % in 2004 and 82 % in 2007) are the communities with the lowest number of prescriptions per person compared with the national average.

If we examine the figures from the second indicator, total pharmaceutical[44] spending, in the previous table (table 48), they reveal that the autonomous communities with the highest population also have the highest expenditure on pharmaceuticals.

The communities with the greatest population have higher expenditure in pharmaceuticals because they write more prescriptions. Other indicators must be considered, such as the number of prescriptions/person or the average cost of prescriptions, in order to observe the effect of policies of rational use, especially in relation with the prescription of generic medicines and their weight in total pharmaceutical spending.

However, a more precise analysis will be required when population data is presented, because variables such as sex or age have a great influence in the qualitative analysis of prescriptions and the possible impact of measures aimed at promoting rational use, so the quality of the data obtained with reference to the population (census or covered), would be improved .

Figure 16 gives us the evolution of relative weight, or the *percentage of pharmaceutical expenditure* of the autonomous communities in the national total of pharmaceutical spending from 2004 to 2007. As in the case of the first indicator, it gives us an idea of the specific weight of each autonomous community within the total pharmaceutical spending of the NHS, but is not a useful tool for comparing different communities. The communities with the greatest health expenditure are those with the greatest number of prescriptions written, both in 2004 and 2007. In some cases there is a trend towards a decrease for the period under analysis (Andalusia and Catalonia) while other communities show an increase (the Valencian Community and Madrid).

The *average cost per prescription* of the NHS is the third standard indicator provided by the autonomous communities. It is obtained directly by dividing the total pharmaceutical spending associated with invoices from the NHS by the total number of prescriptions of the NHS in each autonomous community. Table 48 shows what the average cost per prescription was in each of the autonomous communities in the years between 2004 and 2007, and the variation that has occurred in this period. Communities such as Murcia (15.18 €) and Valencian Community (14.97 €) have the highest average cost per prescription. Andalusia (11.84 €) has the lowest expenditure per prescription.

The tendency shown by the different communities in recent years is as important as the amount spent, and this is shown in figure 17. *It is important*

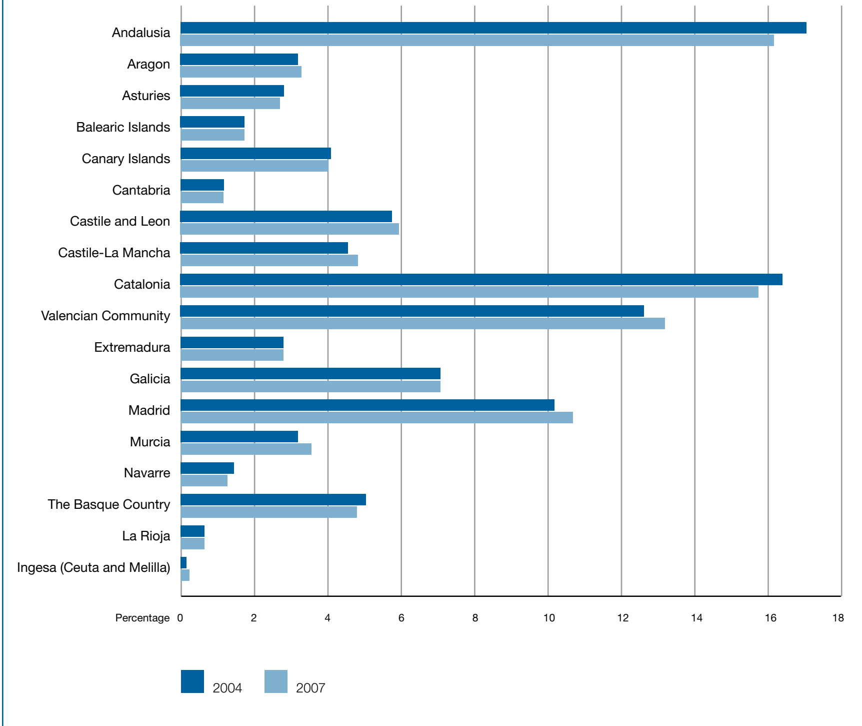
44 As was specified earlier, this indicator gives the amount of the total cost at the RRP plus VAT of the medicines dispensed in pharmacy offices, subtracting the contribution which is paid by the patient and does not include the pharmaceutical spending of hospitals.

TABLE 48. Standardised indicators for pharmaceutical services in autonomous communities, 2004-2007

Autonomous community	Total number of prescriptions			Total spending on pharmaceuticals			Average cost per prescription			Percentage of prescriptions for generic drugs/total prescriptions			Percentage of spending on generic drugs/total spending on pharmaceuticals		
	2007 (thousands)	2004 (thousands)	Variation 2004-2007 (%)	2007 (thousands of euros)	2004 (thousands of euros)	Variation 2004-2007 (%)	2007	2004	Variation 2004-2007 (%)	2007	2004	Relative variation 2004-2007	2007	2004	Relative variation 2004-2007
Andalusia	156,241	133,214	17,29	1,850,279	1,669,335	10.84	11.84	12.53	-5.50	26.46	14.33	84.65	13.74	8.51	61.46
Aragon	26,042	22,340	16,57	376,728	312,950	20.38	14.47	14.01	3.27	16.20	12.22	32.57	6.09	5.67	7.41
Asturies	22,349	19,631	13,85	316,056	272,002	16.20	14.14	13.86	2.06	16.34	10.26	59.26	7.12	6.00	18.67
Balearic Islands	14,583	12,282	18,74	206,222	171,531	20.22	14.14	13.97	1.25	24.33	16.66	46.04	10.42	8.78	18.68
Canary Islands	34,169	29,558	15,60	461,100	399,652	15.38	13.49	13.52	-0.19	11.58	5.88	96.94	4.93	3.33	48.05
Cantabria	10,621	9,058	17,25	142,632	119,657	19.20	13.43	13.21	1.66	23.39	15.77	48.32	9.65	7.59	27.14
Castile and Leon	47,136	41,459	13,69	678,163	565,209	19.98	14.39	13.63	5.53	22.05	11.37	93.93	8.85	5.33	66.04
Castile-La Mancha*	39,782	33,870	17,45	552,826	446,025	23.95	13.90	13.17	5.53	17.10	12.54	36.36	8.96	6.46	38.70
Catalonia	135,981	119,603	13,69	1,810,034	1,608,442	12.53	13.31	13.45	-1.02	23.80	14.48	64.36	10.60	8.14	30.22
Valencian Community	100,867	88,241	14,31	1,509,929	1,233,660	22.39	14.97	13.98	7.07	12.70	7.76	63.66	5.13	3.58	43.30
Extremadura*	22,797	20,821	9,49	319,214	278,854	14.47	14.00	13.39	4.55	16.96	12.70	33.54	7.37	6.72	9.67
Galicia	57,153	49,750	14,88	813,588	689,664	17.97	14.24	13.86	2.69	8.75	5.41	61.74	3.63	2.64	37.50
Madrid	93,732	78,829	18,91	1,224,259	997,421	22.74	13.06	12.65	3.23	25.29	18.22	38.80	10.36	9.38	10.45
Murcia	26,473	22,584	17,22	401,815	317,069	26.73	15.18	14.04	8.11	11.46	8.42	36.10	4.70	4.24	10.85
Navarre	10,801	9,477	13,97	151,102	140,772	7.34	13.99	14.85	-5.82	16.18	11.89	36.08	6.95	6.17	12.64
The Basque Country	38,501	32,849	17,21	556,790	446,963	24.57	14.46	14.85	-2.62	16.27	9.71	67.56	6.03	4.24	42.22
La Rioja*	5,219	4,744	10,02	73,030	63,668	14.71	13.99	13.42	4.26	14.35	10.84	32.38	5.83	4.87	19.71
Ceuta and Melilla	1,932	1,699	13,72	25,321	19,423	30.37	13.11	11.43	14.64	19.67	10.40	89.13	7.97	5.90	35.08
National Total	844,381	730,009	15,67	11,469,086	9,752,297	17.60	13.58	13.36	1.67						

*The data of prescriptions for generic medicines as a percentage of total prescriptions in Castile-La Mancha in 2007 corresponds to 2006. The data for Extremadura in 2004 actually correspond to those of 2005, given that the data for 2004 was incomplete. The data for La Rioja for 2007 are those of 2006, as the data for 2007 had not yet been received. Ministry of Health and Consumers' Affairs, 2008

Figure 16. Relative importance of pharmaceutical spending in each community compared with national pharmaceutical spending. Evolution from 2004 to 2007

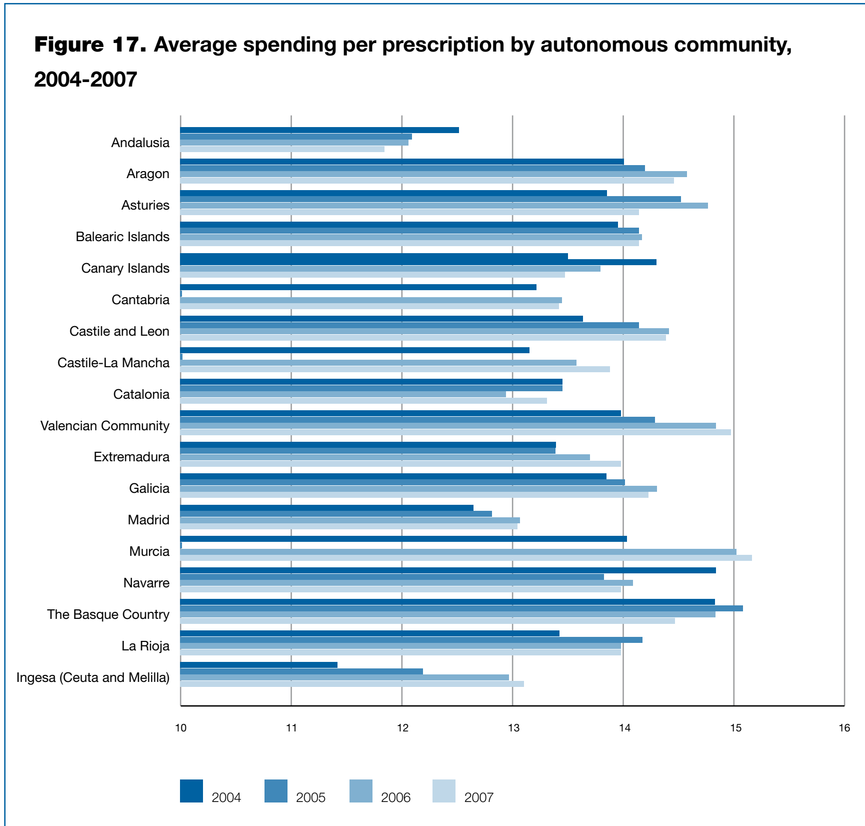


when interpreting these tendencies to take into account the time when the different policies of the communities were put into practice.

Average cost per prescription is a rather vague indicator which only gives an idea of the policies of rational use of medicines which have been adopted in the different autonomous communities. It is an imperfect indicator given that the number of prescriptions written tells us precisely how many prescriptions were written, but not how many different medicines were included in each or the need they represent.

Andalusia (-5,50 %) and Navarre (-5,82 %) are the communities with the greatest reduction in the average cost per prescription in the complete period of analysis (2004-2007) and this tendency has been constant in Andalusia since 2004 while other communities such as Navarre saw a significant improvement in 2005 followed by a return to an upward trend in 2006.

Figure 17. Average spending per prescription by autonomous community, 2004-2007



Most of the autonomous communities, such as Asturies, Aragon, Castile and Leon, Galicia, Madrid and La Rioja increased the average cost of prescriptions in recent years, from 2004 to 2006, although this cost has stabilised and has tended to decrease in the last year.

On the other hand, communities such as Murcia (8.11 %), the Valencian Community (7.07 %) or Castile-La Mancha (5.57 %) have shown a constant tendency towards growth through these four years.

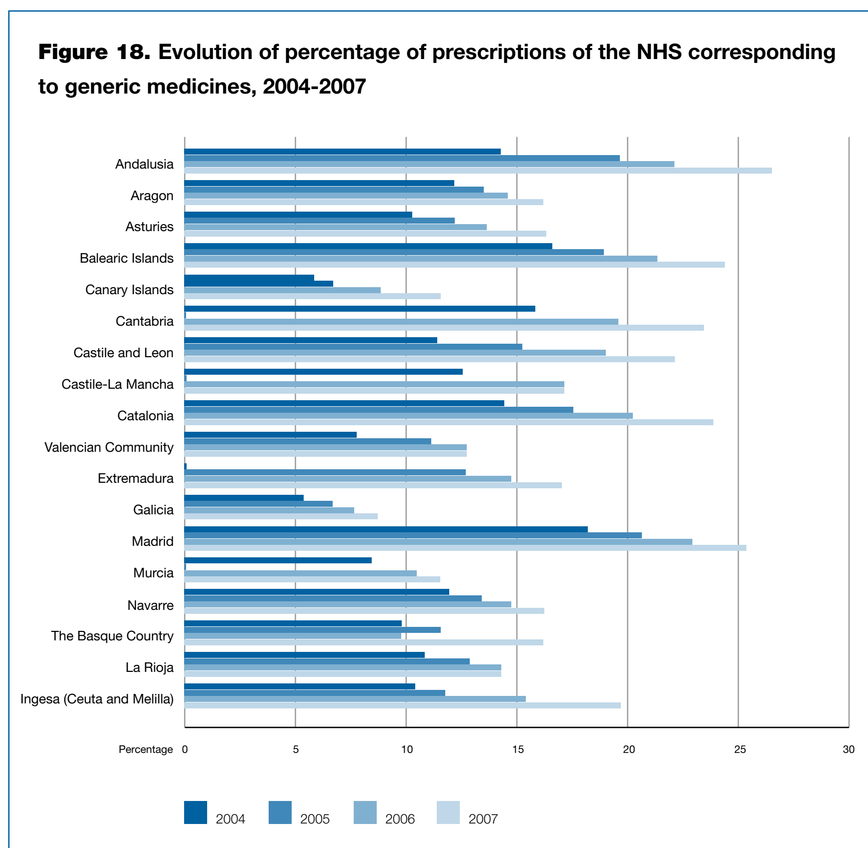
The fourth indicator in this analysis is the proportion *of prescriptions which are generic medicines or generic pharmaceutical specialities (EFG, especialidades farmacéuticas genéricas)* in comparison with the total prescriptions invoiced by the NHS from 2004 to 2007. This indicator shows the effect of the different policies for the promotion of generic medicines adopted by the different autonomous communities.

Table 48 shows that Andalusia (26.46 %), Madrid (25.29 %), the Balearic Islands (24.33 %), Catalonia (23.8 %) and Cantabria (23.39 %) are the autonomous communities with the highest proportion of EFG prescribed in 2007. At the same time, Galicia is the community with the lowest relative weight of generic prescriptions, at only 8.75 % of the total. Other communities with a low proportion of generic prescriptions are the Canary Islands (11.58 %), Murcia (11.46 %) or the Valencian Community (12.7 %).

As with the previous indicator, it is important to note the change that has taken place in EFG prescriptions (fig. 18).

All the autonomous communities have shown a significant increase in the presence of generic pharmaceutical specialities in prescriptions, not including hospitals, although this increase is more noticeable in some communities than others.

Figure 18. **Evolution of percentage of prescriptions of the NHS corresponding to generic medicines, 2004-2007**



Despite not being among the communities with the highest percentage, due to the delay in adopting this indicator, until 2004, the Canary Islands (96.94 %), Castile and Leon (93.93 %) and Ceuta and Melilla (89.13 %) display the highest increase in this indicator.

Aragon (32.57 %), Navarre (36.08 %) and Murcia (32.10 %) are among the communities with the lowest increase in the proportion of generic medicines in their non-hospital NHS prescriptions.

Andalusia, which grew by 84.65 % from 2004 to 2007, became the autonomous community which had the highest percentage of generic medicines among its NHS prescriptions, followed by Madrid, the Balearic Islands and Catalonia.

We can therefore observe a beneficial effect resulting from the promotion of generic products as part of the policies of rational use carried out between 2004 and 2007 in all of the autonomous communities.

Finally, the fifth indicator presented in table 48 is that of the invoices of the NHS *corresponding to the expenditure on generic medicines (EFG)* in the years from 2004 to 2007, and the accumulated variation during these years in each autonomous community.

There is a clear correlation visible between the behaviour of the different regions as regards this indicator.

The autonomous communities with the highest percentage of spending on generic medicines are the ones with the highest percentage of prescriptions of these medicines.

In 2007, Andalusia, Catalonia, the Balearic Islands and Madrid are the communities where the spending on EFGs, not including hospitals, represents more than 10 % de the total. In contrast, Galicia (3.63 %), Murcia (4.7 %) and the Canary Islands (4.73 %) are the communities with the lowest figure for EFGs as a percentage of the total spending, in correlation with the previous indicator for total EFG prescriptions.

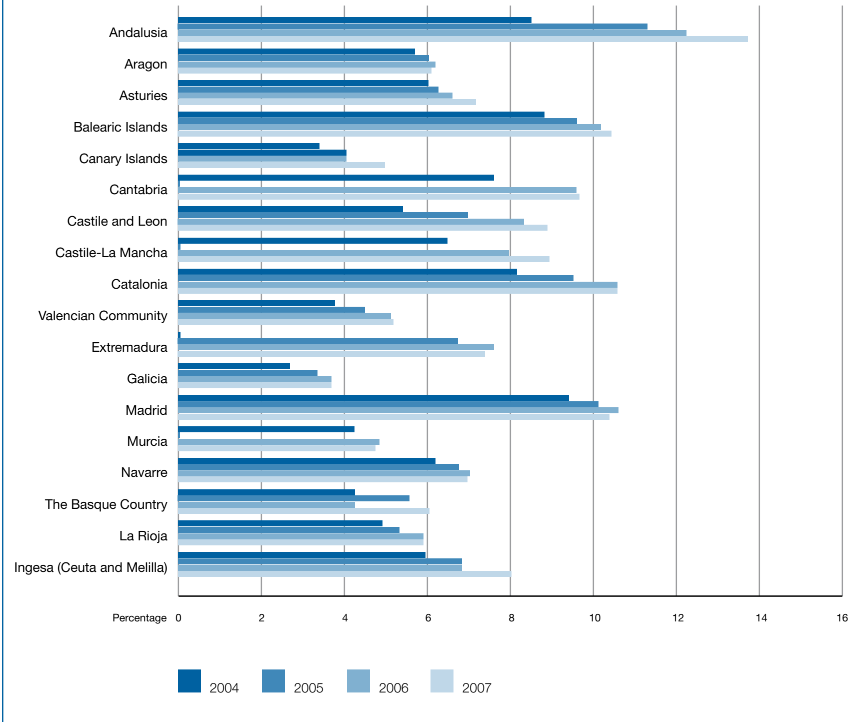
The evolution of this indicator between 2004 and 2007 can be seen in figure 19. Castile and Leon is the region with the greatest variation in percentage share (66.04 %) in the period under observation, while Aragon (7.41 %) is the region with the least change.

In 2007, Andalusia was the autonomous community with the highest proportion of pharmaceutical expenditure dedicated to generic medicines, with 13.74 %.

The scant variation in Aragon is negatively influenced by its situation as one of the autonomous communities with the lowest level of spending on generic products.

Other regions with a limited range of variation in the period from 2004 to 2007 are Madrid (10.45 %) and Murcia (10.85 %). The case of these two autonomous communities, however, is different because Madrid is one of the communities with a high proportion of expenditure associated with

Figure 19. Evolution of pharmaceutical spending associated with generic medicines as a percentage of total pharmaceutical spending, 2004-2007



generic specialities (10.36 %), while Murcia is one of the lowest (4.7 %) as has already been mentioned.

To gain insight into the pharmaceutical services of the different autonomous communities, it is important to analyse which therapeutic groups are predominant among the prescriptions.

Despite slight differences between regions, the first three therapeutic subgroups which receive the most prescriptions are the proton pump inhibitors (A02BC), analgesics of the aniline group (N02BE) and the anxiolytics or benzodiazepine derivatives (N05BA).

If we only consider prescriptions issued for generic medicines (EFG), the proton pump inhibitors (A02BC), known as stomach protectors, emerge once again as the therapeutic subgroup which are most widely prescribed in most of the autonomous communities. The EFG prescriptions issued for the therapeutic subgroups of HMG CoA reductase inhibitors (C10AA) or ACE inhibitors, antihypertensive mono-drugs (C09AA) are also prominent.

Policies and measures for the rational use of medicines

The period from 2004 to 2007 has been fruitful in terms of proposals and the definition of pharmaceutical policy strategies in all the autonomous communities.

Every single one of the reports submitted by the health authorities of the different communities during this four-year period displayed an awareness that the improvement of the information systems was a crucial contribution to an improved use of the resources available.

The most important initiatives carried out by the different autonomous communities are listed below[45]. The absence of an autonomous community in the list of particular pharmaceutical policies implemented should be interpreted with caution, as it does not mean that the policy does not exist. To solve this problem, the most significant activities carried out in the area of information systems have been reviewed as well as those in the area of pharmaceutical plans and policy.

Bearing this caution in mind, we can move on to examine the major areas where measures have been implemented by the autonomous communities in issues related with pharmacy. These measures are presented in table 49 classified into sections.

This classification has been proposed for operational reasons, although this or any other grouping would pose problems given the complementary nature of many of the actions which are included.

Practically all of the autonomous communities[46] have emphasised an interest in the promotion of *prescription by active ingredient (PA) or the prescription of generic medicines* as a priority in the rational use of medicines in one of the years, or over several years.

45 The information which each of the responsible authorities indicated at the time as being the most important was provided by the autonomic health authorities to create the corresponding annual reports of the NHS 2004-2007. It is possible that new measures, or improvements to ones already under way are mentioned in later reports, or that the measures are already established in the culture of pharmaceutical management of the region, and are not considered novel enough to include in the report.

46 The fact that Madrid has not mentioned this measure may appear paradoxical when one considers that it is one of the autonomous communities where generic medicines occupied a greater share of the total number of prescriptions in 2007 (see the previous section in table 48). However, as was mentioned before, this may be due to the fact that this aspect is not considered to be new, but one which already forms part of the standard measures used in the managing of the pharmaceutical service in the community.

TABLE 49. Policies and measures for the rational use of medicines, 2007	
Policies of prescription by active ingredient and promotion of generic medicines	
Improvement of information systems	Support for electronic prescription
	Electronic prescriptions
	Creation and distribution of therapy and pharmacology guides.
	Training and information programmes aimed at prescription writers
	Information programmes aimed at users and the general public
Improvements in healthcare coordination	Coordination programmes between specialized and general primary care
	Programmes of attention for chronic illnesses and patients with multimorbidity/polymedication
	Programmes of pharmaceutical support in health and social centres
Programmes of individual incentives for prescription writers	
Improvements in the purchasing process	
Others	

Andalusia is the only one of the communities to mention the percentage of prescriptions issued by active ingredient. In September 2001, when this initiative was first proposed, prescriptions by active ingredient represented no more than 0.35 % of the total. In December 2007, they represent more than 75 % of this total.

As regards generic prescriptions as a percentage of the total number of prescriptions, there are several ways to promote them besides those of the analysis in the previous section. For example, some communities have chosen to include indicators related to prescription by active ingredient or to a certain quota of generic medicines prescribed among their *criteria for quality.* Others include these indicators in their programmes of *individual incentives for prescription writers.* At the same time, the creation and adoption of pharmaceutical guidelines, and their distribution among prescription writers, along with the *training programmes* and *information* about these aspects and the efforts of *primary care and hospital pharmacists* all have an influence on the prescription writers who are responsible for meeting the objectives outlined above.

The guides have been incorporated in a number of ways. For example, several autonomous communities have opted for adapting the *Therapeutic guide for primary care* published by Semfyc (Spanish Family and Community

Medicine Society)[47]. Others, in contrast, have chosen to prepare their own guides, which have been complemented by the regular publication of pharmaceutical therapy bulletins and the publication of evaluations of the new active ingredients available on the market (as in Madrid).

Two more activities which support those already mentioned are the *reinforcement of the role played by the pharmaceutical and therapeutic committees* in hospitals in the rational use of medicines, and the incorporation of pharmacologists as support for the management teams of primary care. In this context, several autonomous communities have emphasised the effect of consultation with pharmacists of the sector or area in stimulating improvements in the quality of prescriptions.

These pharmacologists can provide support or training. Many of the autonomous communities (practically all, with the exception of Extremadura) emphasise their *training activities for prescription writers.* Some autonomous communities carry out specific activities (for example, pharmaceutical therapy sessions with primary care teams) while others have developed ambitious programmes of continuous training[48].

Another interesting measure mentioned is the signing of agreements between the health authorities of several regions and the Colleges of Pharmacists on the *maximum price of prescriptions* by active ingredient, and the prescription of generic medicines.

During the period 2004-2007, each of the 18 regions (17 autonomous communities plus the autonomous cities of Ceuta and Melilla) have explicitly mentioned in one or several of the years the promotion of *prescription by active ingredient* or *the prescription of generic medicines.*

This *improvement in information systems* is not an end in itself, but different health agencies coincide in affirming that it is an essential factor in the optimisation of resource management. The handling of better and more complete information is a key factor in the policies of rational use of medicines for achieving high quality services.

47 For example, in some communities the electronic medical record is shared between primary and specialized care and includes in the prescription module many of the recommendations contained in the *Therapeutic guide for primary care* for "prescription based on evidence" published by Semfyc.

48 For example, Madrid indicated that throughout 2006 it developed a programme of continuous training in pharmacy therapy in which 1,877 professionals from the Madrid Health Service participated. Other examples would be the programme for information and continuous training for professionals of Ib-salut in pharmacy therapy (Informed programme) developed in the Balearic Islands, or the programmes mentioned in the reports from the Canary Islands or the Basque Country, among others.

The improvement of information systems has been mentioned as an essential part of their pharmaceutical policy by the 18 regions during the 2004-2007 period, from a minimum of 10 explicit mentions out of 18 in 2005 and a maximum of 16 in 2007.

The *development and introduction of an information system on medications in the context of prescription* has been mentioned as a relevant point by several communities (Andalusia, Aragon, the Balearic and Canary Islands, Castile-La Mancha, the Valencian Community, Extremadura, Galicia, the Basque Country and La Rioja)[49].

The combination of the systems of assisted electronic prescription with the digital medical records offers synergies by improving prescription information on the previous experiences of the patient and the pharmaceutical possibilities available as well as "making the information available at the time and place where the patient requires attention" *(Andalusia Report 2007).*

Several autonomous communities indicate that important advances have been made in their services towards the establishment of the electronic prescription system in the near future. Following the distribution of the individual health card and the conversion of patients' clinical registers (to digital clinical history), the introduction of electronic prescription is one of the key areas for action in the Quality Plan for the National Health System as regards the use of information technology. In harmony with the forthcoming development of medical prescriptions, several autonomous communities have introduced the *electronic visa* for which some communities have signed agreements with their respective Colleges of Pharmacists to ensure that the application of the visa can be handled rapidly by the pharmacy offices.

Another action that is becoming more common is to inform doctors of their profile as prescription writers, in comparison with their fellows by area or centre. In some cases it is simply an informative action which can serve for self-evaluation, with *individualised incentives* linked to adjustments in the habits of prescription.

The promotion of the design and use of guides and pharmaceutical therapy bulletins, creation and operation of pharmacy committees, training actions and support for prescription writers have increased in most of the

49 Some autonomous communities indicated that the prescription support module that has been designed could not be added onto the computerised prescription system for the moment, but that it was an objective to be met in the near future. In the case of some communities in one of the middle years of the study period, it was mentioned that assisted prescriptions by computer would be ongoing, reaching a percentage of the community's consultations and would be extended the following year. Unfortunately, the following year's report makes no mention of this aspect.

autonomous communities in terms of both effort and scope between 2004 and 2006.

Besides the support and information provided for prescription writers, the *informative actions aimed at the public* have also proven useful.

The campaigns for the rational use of medicines engaged in some autonomous communities have been complemented by informative campaigns on generic medicines promoted by the Ministry of Health and Consumers' Affairs with their own campaigns. The physician in primary care and the pharmacy offices are the preferred means of getting the message across to the general public.

In the Balearic Islands, the patient as well as the qualified personnel receive information on the pharmaceutical therapy profile of the medicine. This same community also has programmes of educational activities for the rational use of medicines for chronic patients[50], which are combined with the use of new technology in reminding patients when to take the medication[51].

However, this type of intervention in information for patients and the establishment of elements that pursue a more responsible demand for medicines are rarely mentioned.

Castile and Leon is developing a project to improve its pharmaceutical service in centres for the elderly by deposits which are linked to the pharmacy services of the hospitals of the Sacyl network.

A third group of measures refer to the *coordination of healthcare.*

The most notable programmes and actions would be general schemes to coordinate specialized care and primary care with the *Single shared digital medical record,* incorporating a *prescription module* with recommendations from a shared therapeutic guide. Another would be the joint development of shared action protocols for specialized and primary care[52].

The *capitative allowance* of the budget for pharmaceutical services with an adjustment for the population covered, and the proposal for *single authorities* are alternatives which some autonomous communities mention. According to some experts, these proposals call for a huge effort in coordination, even more so when different levels of healthcare are involved, services, an aspect that the Valencian Community and the Balearic Islands mentioned.

50 The Health for Everybody Programme. More information can be obtained by consulting the section dedicated to the autonomous community.

51 Short Message System-SMS. ". More information can be obtained by consulting the section dedicated to the autonomous community.

52 For example the Canary Islands mention the agreement and development of 13 joint protocols between primary and specialized care. Indicators and standards of corporate quality have been established in other communities which are shared between primary and specialized care.

The establishment of *indicators and standards* of corporate quality, shared between primary and specialized care services and the training of *committees on the rational use* of medicines and pharmacy in which experts and professionals from both areas of healthcare take part would be other types of actions available in this area.

Several autonomous communities specify that this collaboration between specialised and primary care with certain type of patient, like the actions on optimising programmes for chronic patients, could be used with patients suffering from various illnesses and are therefore under polymedication, given the complexity of clinical handling of these patients.

Finally, several autonomous communities (Aragon, the Balearic Islands, Cantabria, Catalonia, Extremadura, the Valencian Community and La Rioja)[53] have promoted actions to link medicines from *public centres of social and healthcare services* (which in some case may be private or partially subsidised) in the period studied with the services of pharmacy in primary care or through the dispensary of the hospital pharmacy services. As part of its policy of linking the deposits of medicines in residential homes with the pharmacy services of the regional health service, Extremadura has developed a Pharmaceutical Therapy Guide for the Elderly in collaboration with the Department of Social Services and qualified personnel of the most important private residential homes.

One aspect which is particularly relevant is the introduction of individual incentives which tie health professionals with the efficient use of medicines. Half of the communities mention these measures[54], where we must distinguish between productivity bonuses or incentives which are programmed in the contracts dependent on the group[55], and those which are purely individual. The Balearic and Canary Islands, Castile and Leon, Catalonia, Ceuta and Melilla make express mention of these actions in

53 The report on the Community of Murcia indicated in 2004 that "The creation of deposits of medicines belonging to the Pharmacy Service in health and social centres that are currently supplied by prescriptions through the pharmacy offices is at present under development." However, there were no more mentions of the consolidation or abandon of this measure in either 2005 or 2006. A similar case occurred in the Foral Authority of Navarre. The report for 2004 indicated that "As regards the pharmaceutical service in health and social centres, a Foral Law for Pharmaceutical Care is under development which will enable the opening of Pharmacy Services in those residential, homes where there are more than 100 beds for patients requiring assistance and others that may be decided in accordance with the regulations…".Later reports do not mention any further information on this matter.

54 It is not clear in some autonomous communities whether these incentives are for centres or directly for the prescription writers.

55 Regardless of whether the members of the organization or group receive an individual financial compensation or not.

the period 2004-2007. Castile-La Mancha, the Valencian Community and Galicia mention plans for individual incentives for prescription writers prior to 2007[56].

It is common for qualified personnel to evaluate themselves by accessing their prescription profile through the electronic prescription module and the intranet of the corresponding health service.

It would be interesting to know what relation there is between the average amount reached and the potential maximum in comparison with the average gross salary of a typical prescription writer.

Another measure which was commonly referred to by the health representatives of the communities was the advance that has been made in the *rational management of purchasing.* In 2004, Aragon, the Balearic Islands, Castile-La Mancha, the Valencian Community and the Basque Country mentioned this type of initiative among their most outstanding activities. In 2005, Andalusia, Galicia and La Rioja all joined in, and Andalusia, Aragon, the Balearic Islands, La Rioja, Galicia and the Valencian Community all mentioned them among their principal activities again in 2006. Castile and Leon joined the others in 2007.

Other types of actions mentioned by the autonomous communities, but which appeared far less frequently were those of *improving the systems of Pharmaceutical vigilance* and *establishment of profit criteria* in order to give priority to treatments.

Catalonia mentions the Commission of Evaluation and Budget Impact (CAEIP)of the Catalan Health Service, La Rioja mentions the creation of the La Rioja Centre for Information and Safety in Medicines and Health Products (CERISME).

56 Those autonomous communities are indicated which have mentioned the promotion of incentive actions for prescription writers as an important aspect of their pharmaceutical policy in the period 2004-2007. Once again it should be noted that this does not imply that other communities which are not mentioned do not have these programmes.