

Do Public Managers Care about Recession? Assessment of the Practice Management in a Primary Care Setting

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Abstract

Objective: To assess the practice management in our health care centre (HCC), relating the pharmaceutical expenditure to several clinical indicators in the period 2009-2010.

Methodology: The work team of our HCC comprises seven general practitioners, each one to look after of approximately 1,500 patients of whom 31% are retired. The Electronic Medical Records have been available in our HCC since 2005. In this study we related the standardised expenditure per patient (SEP) to the following indicators: attendance rate, percentages of control and screening of high blood pressure and diabetes mellitus, specialist referrals, the use of evidence C medicines, prescription of omeprazol versus all type of proton pump inhibitors. We assigned to each indicator a value according to its importance and we calculated the total score of each practice and the expenditure by each point.

Results: the mean SEP in our HCC varied from 366.4 Euros in 2009 to 337.25 in 2010. In 2010 the SEP by practice varied from 221.37 to 415.92 Euros. The score obtained by practice varied from 62 to 95 points in 2009 and from 61 to 95 points in 2010. The average global expenditure per point dropped out from 6.96 Euros in 2009 to 6.43 in 2010. The expenditure in 2010, varied from 2.35 to 6.8 Euros depending on practice.

Conclusions: There are big score differences among practices, which persisted during the evaluated period. The two practices with the lowest expenditure have the best clinical indicators, whereas the worst clinical indicators practice has the highest expenditure.

Background

Superfluous expenses are an affordable luxury in times of economic prosperity, but in the current recession period, the control of the expenditure should be closely watched. Health care system is one of the economy sectors to manage an important amount of money, so its control should be exquisite. The economic crisis in Spain reopened the issue of self-sustain capacity of

the public health care system. The healthcare reform between 1984 and 1986 implemented a model of universal health care coverage whose governing principle is the solidarity. Each person contributes in function of their economic capacity and receives health care services depending on their health necessities. This supposes a complex economic problem, to satisfy ever increasing necessities using limited resources. In other terms, the Spanish health care system is universal, totally free and this is why on many occasions it is not fairly valued.

The decentralized system implemented in 2003 allows the 17 Autonomous Communities that Spain has, to manage their own money, although the central government still globally coordinates the health care policies. In Valencia, the autonomous community where we performed our evaluation, the Valencian Health Agency, created in 2003, is the entity in charge of the health care administration. According to the local legislation, the management of the health care centres can be performed directly or indirectly, with public or private resources, by administrative concessions like consortia, foundations, public companies, etc. This autonomic model offers to the health care entities an increasing power of decision making and resources management, thus involving the health care professionals to take responsibility. In 2005 Valencia initiated an administration model based on department management agreements and using evaluation mechanisms to offer retributive differentiation. The medical care quality, the efficacy and the efficiency of the used resources are the basic evaluation criteria of the health care areas of Valencia. It is obvious that beside the medical responsibility of the population, the primary health care professionals have an economic responsibility for the community health spending. It was observed that there are some factors to have an important influence on the expenditure in primary care. Among them, we can find: the general practitioner's (GP) list size **1-2**, the frequency and the attendance pressure **3** and the medical continuing education activities of the health care professionals **4**. It is even postulated that bigger size GP lists have less diagnoses and in consequence less treatment of chronic processes and a subsequently lower proportional expenditure **5**. We assessed the management of the seven practices of our health care centre (HCC), connecting the pharmaceutical expenditure to some clinical indicators. We had access to several variables extracted from the Electronic Medical Records (EMR), available in our HCC since 2005, and from the pharmaceutical provision management programme (called GAIA) **6-7** of our Autonomous Community Health Department.

Material and methods

Our HCC is comprised of seven general practices and it is placed in a peripheral neighbourhood from Valencia City. In 2010 it looked after a population of 9,378 adult patients (aged 14 or more) of whom 31.2% were retired. All practices have similar features regarding the number of patients (less than 1,500 patients per GP list), although there are some differences regarding the retired population percentage (27.1% - 39.9%). The prevalence of high blood pressure (HBP) of our HCC is about 23.3%, ranging from 21.6% to 32.5% depending on each practice, while the prevalence of diabetes (DM) in our HCC is 10.4% and varying from 8.2% to 13.6% among the practices. All the general practitioners but one are Family Medicine specialists having done the residency programme. Our HCC provides systematically 7-8 continuing medical education sessions per month, which is an activity accredited by the National Health System. The work place stability is over 10 years in all cases. Our patient attendance rate is higher than in other health care centres of the same city. In order to assess the practice management we used the following variables extracted from EMR and GAIA programme: attendance rate (number of visits /patient/year) (AR), standardized expenditure per patient (SEP) (expenditure in Euros generated by each patient in primary health care); percentages: specialist referrals (number of referrals/patient/year) (SR), high blood pressure (HBP) screening (HBPScr) (number of patients aged 14 to 40 with at least one record of BP in the last 4 years and the number of patients aged over 40 with at least one record of BP in the last 2 years, divided by the number of users aged 14 and over); control of HBP (<140/90mmHg) (HBPCon) (percentage of HBP patients having BP values inferior to 140/90 mm Hg), diabetes mellitus (DM) screening (DMScR) (percentage of patients aged 45 and over with at least one glycaemia report in the last 3 years divided by the number of patients aged 45 and over); control of diabetes mellitus (HbA1c≤7%) (DMCon) (percentage of diabetics with HbA1c values inferior to 7%), use of evidence C medicines (ECM), use of omeprazol with regard to total use of proton pump inhibitors (O/PPI). We allocated a number of points to each variable depending on its relative importance so that the maximum overall score was 100 points: AR 10 points, SEP 20 points, SR 10 points, HBPScr and DMScR 5 points each, HBPCon and DMCon 15 points each, ECM 10 points and O/PPI 10 points. The maximum value of each variable was assigned to the best practice and the rest of practices received a score proportionally to its outcomes.

After having the results done and aiming to take improvement measures, at the beginning of 2010 we held two clinical sessions. The first one was to present the results anonymously and the second, given by the GP who had obtained the best results, was about the surgery management in day to day practice in primary health care. At the beginning of 2011 we presented the data corresponding to the assessment of year 2010. Additionally, taking into account the SEP of each practice for both years (2009 and 2010) we calculated the cost in Euros per patient of each point generated by the assessed variables: AR, SR, HBPScr, HBPCon, DMScr, DMCon and ECM.

Results

The mean SEP in our HCC went from 366.4 Euros in 2009 to 337.25 in 2010, which means a cost drop of 29.15 Euros (8%) per patient last year. Assessing this SEP by practice, we observed a variation in 2010 from 221.37 Euros spent by the lowest expenditure practice to 415.92 Euros in case of the highest expenditure practice.

Table 1 shows data corresponding to 2009 of the different variables and their assigned points, for the seven practices of the HCC.

Table 2 shows the same variables, but corresponding to 2010. The mean global expenditure per point dropped from 6.96 Euros in 2009 to 6.43 Euros in 2010, which represents a saving of 0.53 Euros per point, equivalent to a percentage of 7.6. The same expenditure in 2010 ranged from 2.35 to 6.8 Euros depending on each practice.

Table 3 shows the cost in Euros per point obtained by each practice in the period 2009-2010. Figure shows the evolution of the scores obtained by each practice during these two years.

Discussion

The expenditure in primary health care was related to the percentage of retired patients per practice list **8-9**. Although in our case it differs discreetly among the practices, but considering the average practice size (less than 1,500 patients), we don't think it could have an influence on the expenditure. This is especially because the prevalence of HBP (25.3 % - 32.1 %) and DM (10.8 % - 13.2 %) of the practices with lower expenditure are similar or inclusively higher than those with higher expenditure (HBP 24.8% - 27.3%; DM 11.2% - 11.9%). Besides that, the

achieved control degree is better in the case of the first ones [HBP (33.7% - 35.5%) and DM (44.5% - 49.7%)] than those with higher expenditure [HBP (18.9%), DM (33.9%)] **10 -11**.

Analysing the results we find out that there are two out of seven practices (P1 and P4) which have obtained the best score in the two years, higher than 89 points, there are four (P2, P3, P6 and P7) with an intermediate score (ranging from 69 to 77 points) and there is one (P5) with a low score, 62 points. In addition to having the best score, the first two practices are also the ones to generate the lowest expenditure, whereas P7 and P5 are those with the highest expenditure, in both years.

When we analyse the evolution of the expenditure per point of each practice we observe that there was a cost drop in all cases that varied from 0.19 to 1.3 Euros per point. The SEP also decreased in all practices, varying from 7.12 Euros in the case of P2 to 58.93 Euros in the case of P6, which represents an average SEP drop of 29.15 Euros for the HCC. Taking into account the number of patients attended by our HCC, a multiplication would be enough in order to calculate the savings, including even an improvement of the assessed clinical variables (HBP control and DM control) in 2010. However, when we compare the practices we see that there are big differences among them and they persist during the two years. In 2010 the SEP varied from 221.37 to 254.8 Euros and the expenditure per point from 3.44 to 3.72 Euros in the case of the best two practices (P1 and P4) and from 415.77 to 4 15.92 Euros of SEP and from 8.05 to 9.76 Euros of the expenditure per point in the case of the worst two practices (P7 and P5). The percentage of SR was also bigger for the practices with higher expenditure **12**.

Limitations and Strengths

We consider possible bias of our study due to several reasons:

1. It analyses the data of only a primary care setting.
2. The number of the variables used is little. They are the only variables we had access to from the EMR and GAIA pharmaceutical provision management programme of our autonomous community. Maybe a larger amount of variables would modify the scores of our practices, although we think that the output regarding the spending differences would remain perfectly valid.
3. The assigned number of points to each variable depended on the subjective importance we gave to each one.

4. We didn't assess the perception of the users regarding the quality of the health care services as an indicator of population satisfaction.

Therefore we think that the conclusions are especially applicable to our HCC. However, this study helped us to objective the big differences between the practices from our HCC. It revealed a relation between the indicators of the health care services quality and the economical return which future studies could confirm as a pretty frequent feature of the Spanish health care system.

These data show us that the two practices with the best medical management are the ones to also have the lowest SEP and the lowest expenditure per point during both years and the practices with the worst clinical outcomes are the ones to have the biggest expenditure of the public money. It is true that there was an improvement in 2010 compared to 2009, both of the clinical control variables as of the expenditure. The thing we don't exactly know is if the measures we took (work team session debates) could have played a major role in this improvement **13**, as we understand that changing habits of your own practice management after many years of routine is very difficult, especially if there is no certain external control over it. It is mandatory to keep a permanent attitude of assessing different aspects of the work we perform in the HCC, presenting the findings to the rest of the work team aiming to take improvement measures for them **13-15**, independently of the attitude the public managers might have.

All these data, and even better ones, that are available for the public managers, should determine more intervention in the field, as a private company manager would do. Our study shows the necessity for the health care managers to make changes of the assessment techniques. It is obvious that the public health care management model has been continuously refining in the last decades, since Spain started the modernization of the primary health care. However, the data show the need to adopt new management control systems with more flexibility and better feedback.

References:

- 1.- Cabedo Garcia VR, Poveda Andres JL, Peiro Moreno S, Nacher Fernandez A, Goterris Pinto MA. Factores determinantes del gasto por prescripcion farmaceutica en atencion primaria. Aten Primaria. 1995;16:407-16.

- 2.- Reyes Rodriguez JF, Placencia Nunez M, Joyanes Romo A, et al. La poblacion adscrita y sus características como elemento de ajuste para la asignacion presupuestaria individualizada en farmacia. *Aten Primaria*. 2000;25:339-42.
- 3.- Azpiazu Garrido M, Garcia Olmos L. Factores condicionantes del gasto en farmacia en los centros de atencion primaria de un area de salud. *Aten Primaria*. 2002;29:74-9.
- 4.- Mengibar Torres FJ. Gasto farmaceutico en atencion primaria reformada: implicacion de las actividades formativas en el ahorro de farmacia. *Gac Sanit* 2000;14:277-86.
- 5.- Simo Minana J, Calvo Perez M, Beltran Brotons JL. Tamano del cupo e importe, intensidad y calidad de la prescripcion de los medicos de familia. *Aten Primaria*. 2011;43:69-81.
- 6.- Trillo Mata JL, Pascual de la Torre M, Perales Marin A, Villalba Garnica P, Dominguez Carabaotes A. Sistemas de informacion sanitaria de la Conselleria de Sanidad de la Comunidad Valenciana. GAIA: gestor de prestacion farmaceutica. *Farmacia de Atencion Primaria* 2003;3:14-24.
- 7.- GAIA: gestor integral de prestacion farmaceutica. *Boletin Farmacoterapeutico Valenciano*. 2002;1:51-4.
- 8.- Jimenez Puente A, Ordonez Marti-Aguilar MV, Cordoba Dona JA, Fernandez Gomez MA. Factores relacionados con el gasto y la calidad de la prescripcion farmaceutica en atencion primaria. *Aten Primaria*. 1995;16:131-6.
- 9.- Rodriguez FJ, Lopez F, Modrego A, et al. Identificacion de medicos con gasto farmaceutico elevado. *Gac Sanit*. 2001;15:441-6.
- 10.-Gomez-Castro MJ, Arcos P, Rubiera G, Rigueira A. Comparacion de dos modelos de indicadores de la calidad de la prescripcion farmaceutica en atencion primaria. *Gac Sanit*. 2003;17:375-83.
- 11.-Amado Guirado E, Madrdejós Mora R, Perez Rodriguez M, Puig X. Relacion entre calidad y coste de la prescripcion farmacologica en atencion primaria. *Aten Primaria*. 2000;25:464-8.
- 12.- Gonzalez Lozano MJ, Gomez-Calcerrada Berrocal D, De Maya Matallana MC, Mendoza Garcia C. El profesional y la organizacion en el uso de recursos de atencion primaria. *Aten Primaria*. 2000;26:526-32.

13.- Madridejos Mora R, Amado Guirao E, Perez Rodriguez MT. Effectiveness of the combination of feedback and educational recommendations for improving drug prescription in general practice. Med Care. 2004;42:643-8.

14.- Sketris IS, Langille Ingram EM, Lummis HL. Strategic opportunities for effective optimal prescribing and medication management. Can J Clin Pharmacol. 2009;16:e103-25.

15.- Izquierdo Palomares JM, Almodovar Carreton MJ, Saiz Fernandez LC, Siguin Gomez R, Lopez Gomez C, Garrido Elustondo S. Plan de mejora de los indicadores de farmacia en un area sanitaria de atencion primaria de Madrid: descripcion y resultados. Aten Primaria. 2011;43:140-7.

Tables and figures

Table 1 - The score obtained by each practice in 2009 for the assessed variables*.

AR	4.75	4.98	5.97	6.01	6.89	6.98	7.68
points	10 P1	9.53 P2	7.95 P3	7.9 P4	6.89 P5	6.8 P6	6.18 P7
SEP	239.7	312.58	328.59	397.85	424.43	425.06	436.6
points	20 P1	15.3 P4	14.6 P2	12.0 P6	11.3 P5	11.3 P3	11.0 P7
SR	0.329	0.421	0.434	0.486	0.552	0.569	0.740
points	10 P1	7.81 P3	7.58 P4	6.76 P2	5.96 P6	5.78 P7	4.44 P5
HBPScr	69.47	69.25	59.64	56.07	51.99	41.67	33.79
points	5 P3	4.98 P4	4.29 P6	4.03 P7	3.74 P1	2.99 P2	2.43 P5
HBPCon	32.2	30.77	30.2	25.96	18.18	17.75	17.08
points	15 P1	14.3 P6	14.1 P4	12.1 P7	8.46 P3	8.26 P2	7.95 P5

DMScr	92.28	90.98	89.34	83.17	80	60.35	58.36
points	5 P4	4.92 P6	4.84 P1	4.5 P7	4.33 P2	3.26 P3	3.16 P5
DMCon	40.25	40.24	39.8	37.65	35.4	31.11	30.4
points	15 P1	15.0 P4	14.8 P7	14.0 P6	13.2 P5	11.6 P3	11.3 P2
ECM	2.78	3.71	4.07	4.17	4.78	4.97	5.68
points	10 P4	7.49 P3	6.83 P1	6.66 P2	5.81 P6	5.59 P7	4.89 P5
O/PPI	90.8	84.78	82.19	75.57	75.07	73.02	69.82
points	10 P1	9.33 P4	9.05 P2	8.32 P3	8.26 P6	8.04 P5	7.68 P7

* AR: Attendance Rate. SEP: Standardised Expenditure per Patient. SR: percentage of Specialist Referral per Patient. HBPScr: Percentage of HBP screening. HBPCon: Percentage of well controlled HBP patients. DMScr: percentage of DM screening. DMCon: Percentage of well controlled diabetic patients. ECM: percentage of use of evidence C medicines. O/PPI: percentage of omeprazol use versus all type of proton pump inhibitors. P: practice.

Table 2 - The score obtained by each practice in 2010 for the evaluated variables*.

AR	5.15	5.38	5.61	5.89	5.99	6.96	7.82
points	10 P4	9.57 P1	9.18 P2	8.74 P3	8.6 P6	7.4 P5	6.58 P7
SEP	221.37	254.8	321.47	338.92	392.49	415.77	415.92
points	20 P1	17.4 P4	13.8 P2	13.1 P6	11.3 P3	10.6 P7	10.6 P5
SR	0.498	0.537	0.545	0.590	0.705	0.965	1.021

points	10 P4	9.27 P2	9.13 P1	8.44 P3	7.06 P6	5.16 P7	4.87 P5
HBPScr	73.86	68.72	63.71	58.85	58.64	47.12	34.86
points	5 P4	4.65 P3	4.31 P6	3.98 P1	3.96 P7	3.18 P2	2.35 P5
HBPCon	35.46	33.68	29.5	25.8	18.85	15.9	14.4
points	15 P4	14.2 P1	12.5 P6	10.9 P7	8.0 P5	6.7 P2	6.1 P3
DMScr	87.42	87.31	86.94	86.69	79.57	74.67	68.5
points	5 P4	4.99 P6	4.97 P7	4.95 P1	4.55 P2	4.27 P3	3.91 P5
DMCon	49.66	46.49	44.53	42.5	38.51	34.16	33.94
points	15 P1	14.0 P7	13.5 P4	12.8 P2	11.6 P6	10.3 P3	10.2 P5
ECM	3.06	3.99	4.06	4.14	5.06	5.09	5.23
points	10 P4	7.66 P6	7.53 P3	7.39 P1	6.04 P7	6.01 P2	5.85 P5
O/PPI	92.51	88.02	82	76.92	75.87	73.13	72.24
points	10 P1	9.51 P4	8.86 P2	8.31 P3	8.2 P6	7.9 P5	7.8 P7

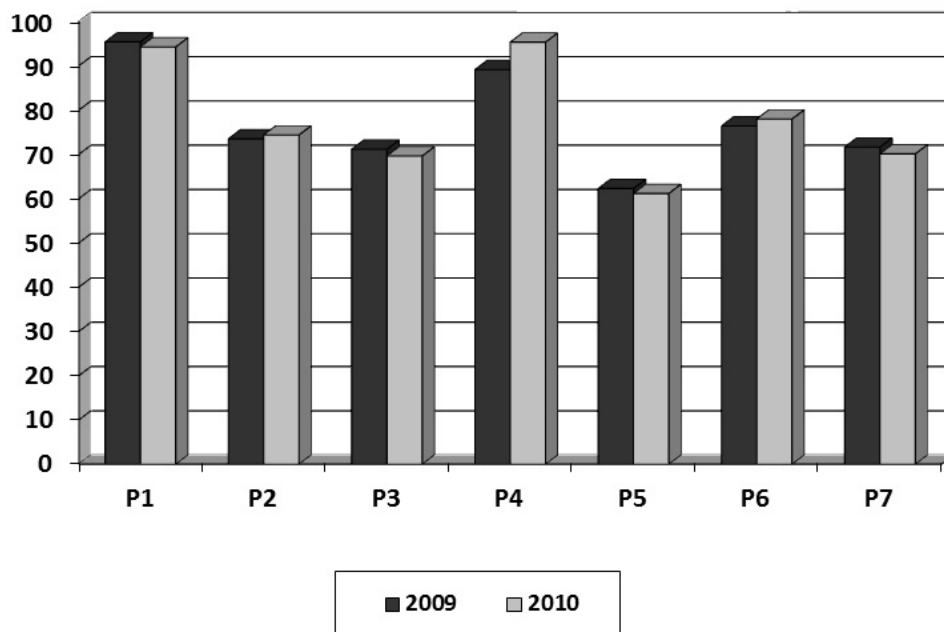
* AR: Attendance Rate. SEP: Standardised Expenditure per Patient. SR: percentage of Specialist Referral per Patient. HBPScr: Percentage of HBP screening. HBPCon: Percentage of well controlled HBP patients. DMScr: percentage of DM screening. DMCon: Percentage of well controlled diabetic patients. ECM: percentage of use of evidence C medicines. O/PPI: percentage of omeprazol use versus all type of proton pump inhibitors. P: practice.

Table 3 - The cost in Euros and the saving achieved for each point by the seven practices.

	P1	P2	P3	P4	P5	P6	P7
2009	2.51	4.47	5.97	3.51	6.81	5.21	6.10
2010	2.35	4.32	5.64	2.67	6.80	4.35	5.93
Saving per point	0.16	0.15	0.33	0.84	0.01	0.86	0.17

P: practice.

Figure - The evolution of the global score obtained by each of the seven practices during the evaluated period



P: practice.