

**LETTER**Received: 2016 June 21  
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Epublish: 2016 June 24**MORBIDITY AND HEALTHCARE COSTS: TOWARDS A BENCHMARKING?****(Morbilidad y costes sanitarios: hacia un benchmarking?)****José M Inoriza (1,2), Xavier Pérez Berrueto (2,3), Marc Carreras (1,2) and Jordi Coderch (1,2).**

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We read the article by Caballer and collaborators Impact of Morbidity on Health Care Costs of a Department of Health through Clinical Risk Groups. Valencian Community, Spain<sup>(1)</sup> with great interest. We would like to make some relevant comments based on our experience using similar methods in an integrated health organisation (OSI).

In 2013 the OSI Serveis de Salut Integrats Baix Empordà (SSIBE) had 92,007 people affiliated with its service (average age 41.04 years; 19.3% under 18 years and 17.9% over 64 years). **Table 1**, which is structured in the same way as one of the tables in the aforementioned article, shows the distribution by health status (CRG), sex and healthcare costs in SSIBE. The method used, described previously by our group, is similar to that of the article in question.<sup>(2-4)</sup> Healthcare expenditure was 65,940,605.80€, with a median cost of 176.6€. 17.6% of the population did not incur any healthcare costs and for 19.4% of the population spending was higher than the

average (716.69€ CI95%: ± 15.99€). A comparison of the two territories highlights some key points.

The population affiliated with the SSIBE is slightly younger, even though the disease burden found is higher (**table 1**). A primary cause for this could be the version of the grouping software used, which is not specified in Caballer's article. In SSIBE is version 1.9.1, concurrent model, that includes pharmacy information (ATC codes).<sup>(5)</sup> The clinical codification styles and early knowledge of the disease burden of the population, a phenomenon described previously by our group, could also explain the variations.<sup>(2)</sup> Or ultimately, the differences detected could in fact be a reflection of a different disease burden in the two territories.

A comparison of the healthcare costs in the two organisations also highlights some important differences: the average cost per person in SSIBE is 716€, which is noticeably lower

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**Table 1**  
**Population affiliated with the Integrated Health Service Baix Empordà (SSIBE). Distribution by Health Status (CRG), Sex and Healthcare Costs. Year 2013. \*CRG: 3M© Clinical Risk Groups software v 1.9.1**

Health status (CRG*)	Men (%)	Average	Women (%)	Average	Population (%)	Total cost (€) (%)	Average cost (€) person	Average cost (€) men	Average cost (€) women
1. Healthy	25,472 (55.2%)	30.79	21,431 (46.7%)	29.95	46,903 (51.0%)	7,481,728.81 (11.3%)	159.51	121.49	204.71
2. Significant acute disease	2,996 (6.5%)	29.21	3,341 (7.3%)	30.00	6,337 (6.9%)	4,245,943.02 (6.4%)	670.02	446.72	870.27
3. Single minor chronic disease	3,341 (7.2%)	38.87	4,845 (10.6%)	41.26	8,186 (8.9%)	3,526,168.96 (5.3%)	430.76	427.94	432.70
4. Minor chronic disease in multiple organ systems	652 (1.4%)	50.40	1,932 (4.2%)	51.49	2,584 (2.8%)	1,909,063.18 (2.9%)	738.80	868.01	695.20
5. Single dominant or moderate chronic disease	6,043 (13.1%)	49.44	5,799 (12.6%)	52.11	11,842 (12.9%)	8,798,227.67 (13.3%)	742.97	702.61	785.02
6. Significant chronic disease in multiple organ systems	6,408 (13.9%)	66.04	7,522 (16.4%)	68.66	13,930 (15.1%)	26,574,483.26 (40.3%)	1,907.72	1,836.16	1,968.68
7. Dominant chronic disease in three or more organ systems	685 (1.5%)	75.01	644 (1.4%)	80.05	1,329 (1.4%)	6,573,960.35 (10.0%)	4,946.55	4,890.34	5,006.33
8. Dominant and metastatic malignancies	352 (0.8%)	71.54	245 (0.5%)	67.18	597 (0.6%)	3,540,365.48 (5.4%)	5,930.26	6,238.86	5,486.89
9. Catastrophic conditions	206 (0.4%)	49.39	93 (0.2%)	49.96	299 (0.3%)	3,290,665.07 (5.0%)	11,005.57	11,470.16	9,976.48
Total	46,155	39.94	45,852	42.15	92,007	65,940,605.80	716.69	657.55	776.22

(27.2%) than the 983€ per person in Denia. Furthermore, expenditure by overall health status for both sexes is also lower in SSIBE. Healthcare costs in SSIBE correspond exclusively to the analytical accounting of the organisation, while in Denia base rates are used in some activities. It also appears that the costs of the healthcare of their population outside their territory are included in the figures for Denia, but not for SSIBE. Our group, however, has estimated these figures for SSIBE to be 2% of the healthcare visits and 17% of the healthcare costs.<sup>4</sup> On the other hand, costs for medium and long-term socio-sanitary stays are included in the figures for SSIBE, while we don't know if are included in the Denia study. Once the previously described causes have been disregarded, the observed differences would correspond to variations in cost efficiency according to morbidity.

The general coincidences of the data presented are also worth highlighting. Thus, with very slight differences, a similar distribution of the disease burden of the population and similar behaviour for the additional healthcare costs associated with an increase in the disease burden is observed. There are also coincidences in the size of the segments of the population where healthcare spending is concentrated and in the unequal distribution of healthcare costs between men and women during their lives.<sup>(3,4)</sup>

Minimum Basic Data Sets (CMBD) similar to those for hospital services must be defined and put into place for the other health resources (primary healthcare, mental healthcare, etc.) so that a CMBD for the population can be defined in order to move forward with allocating budgets based on people's needs (according to morbidity) rather than setting them structurally. To achieve this, agreement must also be reached on the use of homogeneous classification systems for the morbidity of the population, which are internationally recognised in the literature and reinforced by experiences undergone when implemented in our country.<sup>(1,2,4,6)</sup>

We consider that an advance in this direction will allow benchmarking models similar to the ones developed from experiences like those of the Results Centre in Catalonia and the Atlas of Variations in Medical Practice in Spain (VPM project)<sup>(7,8)</sup> to be created, in order to be able to compare specific territories and organisations and improve healthcare for the population.

## REFERENCES

1. Caballer Tarazona V, Guadalajara Olmeda N, Vivas Consuelo D, Clemente Collado A. Impacto de la morbilidad en los costes asistenciales de un departamento de salud de la comunidad valenciana a través de los grupos de riesgo clínico. *Rev Esp Salud Publica.* 2016;90:e1-15.
2. Inoriza JM, Coderch J, Carreras M, Vall-llosera L, García-Goñi M, Lisbona JM, et al. La medida de la morbilidad atendida en una organización sanitaria integrada. *Gac Sanit.* 2009;23(1):29-37.
3. Carreras M, Ibern P, Coderch J, Inoriza JM. Anàlisi de costos per pacient en una organització sanitària integrada. *Fulls Econ.* 2010;39:28-37.
4. Inoriza JM, Carreras M, Lisbona JM, Sánchez E, Coderch J, Ibern P, et al. La despesa sanitària poblacional segons la morbiditat atesa. In: *Estudis Economia de la Salut III*. Primera ed. Barcelona: Generalitat de Catalunya. Departament de Salut; 2010. p. 79-130.
5. 3M Health Information Systems. 3MTM Clinical Risk Groups. Definitions Manual. 2001.
6. Orueta JF, Nuño-Solinis R, Mateos M, Vergara I, Grandes G, Esnaola S. Predictive risk modelling in the Spanish population: a cross-sectional study. *BMC Health Serv Res.* 2013;13:269.
7. Agència de Qualitat i Avaluació Sanitàries de Catalunya Aq. Central de Resultats - [Internet]. Available from: [http://aquas.gencat.cat/es/projectes/central\\_resultats/](http://aquas.gencat.cat/es/projectes/central_resultats/)
8. Bernal-Delgado E, García-Armesto S, Peiró S. Atlas of Variations in Medical Practice in Spain: the Spanish National Health Service under scrutiny. *Health Policy.* 2014;114(1):15-30.