

A real-world data study regarding hospital resources use and costs associated with melanoma cancer in Spain

Carmen Barrull¹, Ángel Baltasar¹, Daniel Callejo¹, Vanessa Gómez¹, Neus Canal¹, Miriam Solozabal¹
¹HEOR-RWI, IQVIA Spain

BACKGROUND

- In Spain, melanoma cancer is the 13th most frequent tumour in men and the 9th in women, with 5,186 new estimated cases diagnosed in 2017 (1). During the last decades, skin melanoma incidence increased in Spain (2) and, according to Globocan information, this trend will continue in the future (3).
- 959 people died in 2016 in Spain from melanoma cancer (1).
- Tumors has become one of the most important socioeconomic problems in Spain, and cutaneous melanoma represents a considerable cost for the national health system (4,5).

OBJECTIVES

- The aim of the study is to describe hospital resources used and costs associated to CRC patients who attended hospital during 2016 through a healthcare claim database (6).

METHODS

Study design and patients

- Madrid is the 3rd most populated region in Spain with almost 6.5 million inhabitants (7), 52% female. Retrospective data from the Minimum Basic Data Set (MBDS) of the Ambulatory and Patient's Hospitalization database 2016 of Madrid were used (6).
- Patients were included if they had at least one diagnosis for melanoma cancer (coded C43 using the 10th revision of the ICD-10). Every single hospital contact, outpatient or inpatient, independently of the reason for visit, was collected in order to estimate the clinical and economic burden of disease. Longitudinal follow-up during 2016 for patients included was carried out.

Data extraction

- Socio-demographic information (age and sex), number of hospital contacts (inpatient and outpatient care), length of stay (days), main diagnoses, procedures performed during hospitalization and outpatient care data were extracted and analyzed.

Statistical analysis

- A descriptive statistical analysis was performed and the following measures were calculated: mean, standard deviation (SD), rate per 100,000 inhabitants and percentage. In order to estimate the corresponding costs associated to each procedure performed, severity diagnosis-related groups (DRG) adjusted official prices and DRG weights were applied for inpatient and outpatient episodes, respectively (8). Total costs and per patient costs were calculated in Euros 2017. A sub-analysis was performed for patients who died during the year studied.

RESULTS

- A total of 842 patients with melanoma cancer were identified: 53.9% women, mean age (SD) 61.8 (18.0). A total of 2,724 episodes (134 and 2,590 hospitalization and outpatient episodes, respectively) were observed (Table 1).

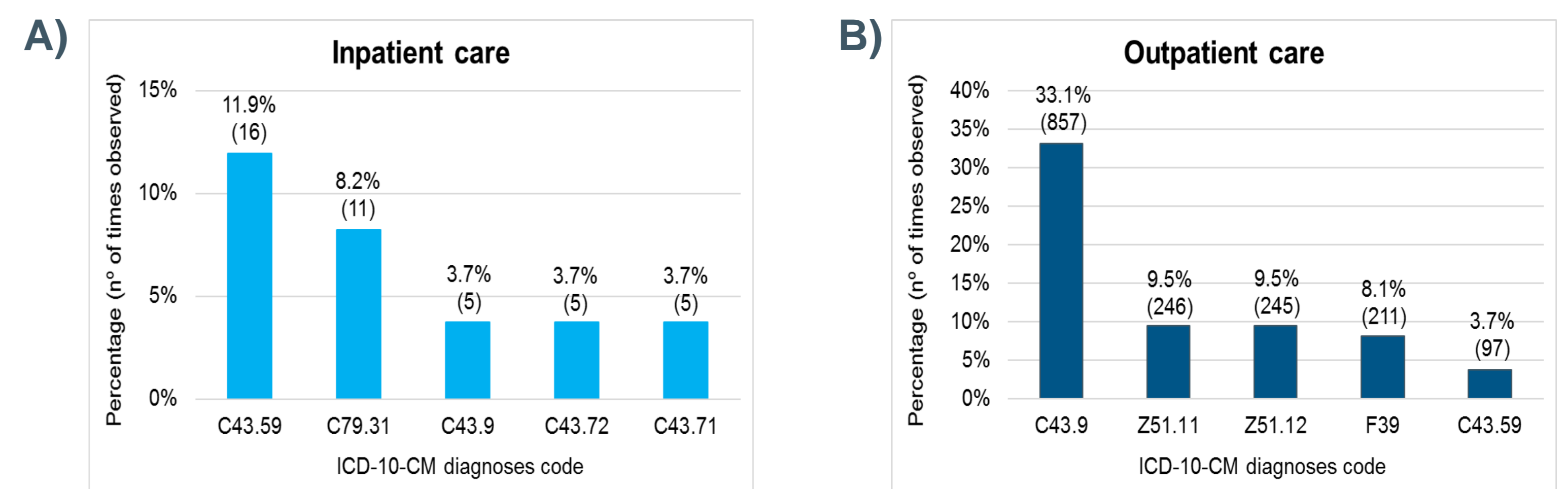
Table 1. Patient characteristics and episodes by type of care

Characteristic		Inpatient care (N=83)	Outpatient care (N=805)	Total* (N=842)
Age, years	Mean (SD)	66.0 (16.1)	61.7 (18.0)	61.8 (18.0)
Sex, n (%)	Women	45 (54.2)	436 (54.2)	454 (53.9)
	Men	38 (45.8)	369 (45.8)	388 (46.1)
Number of episodes, n		134	2,590	2,724
Number of episodes per patient		0.2	3.1	3.2
Rate of episodes per 100,000 inhabitants**		2.6	49.4	52.0

*Total number of patients excluding duplicates
**According to Comunidad de Madrid population in 2016 (7)
SD: standard deviation

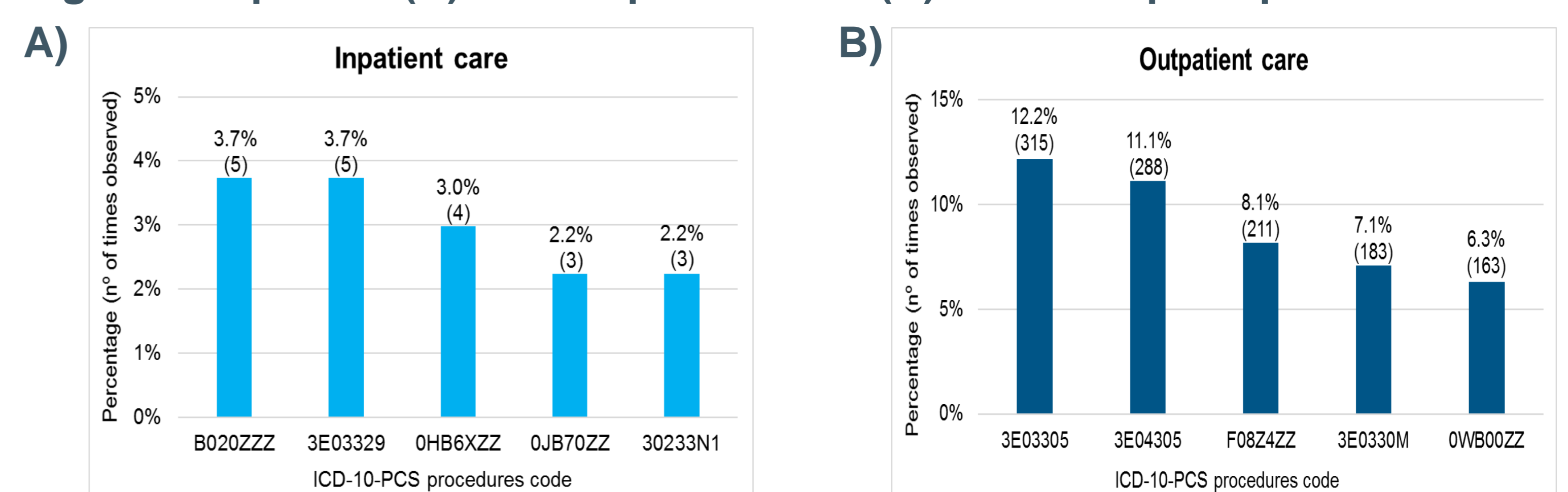
- 11 (13.3%) patients died during a hospital episode. 54.5% of them were men and the mean age (SD) at first episode was 60.2 (24.4) years. A total of 79 previous episodes were reported during 2016 before exitus, of which 29 were hospitalizations.
- 5 most frequent main diagnoses related to hospitalization and outpatient episodes and 5 most frequent procedures performed during the episodes are shown in Figure 1 and Figure 2, respectively.

Figure 1. Inpatient (A) and outpatient care (B): most frequent main diagnoses



C43.59: Malignant melanoma of other part of trunk; C43.71: Malignant melanoma of right lower limb, including hip; C43.72: Malignant melanoma of left lower limb, including hip; C43.9: Malignant melanoma of skin, unspecified; C79.31: Secondary malignant neoplasm of brain; F39: Unspecified mood [affective] disorder; Z51.11: Encounter for antineoplastic chemotherapy; Z51.12: Encounter for antineoplastic immunotherapy

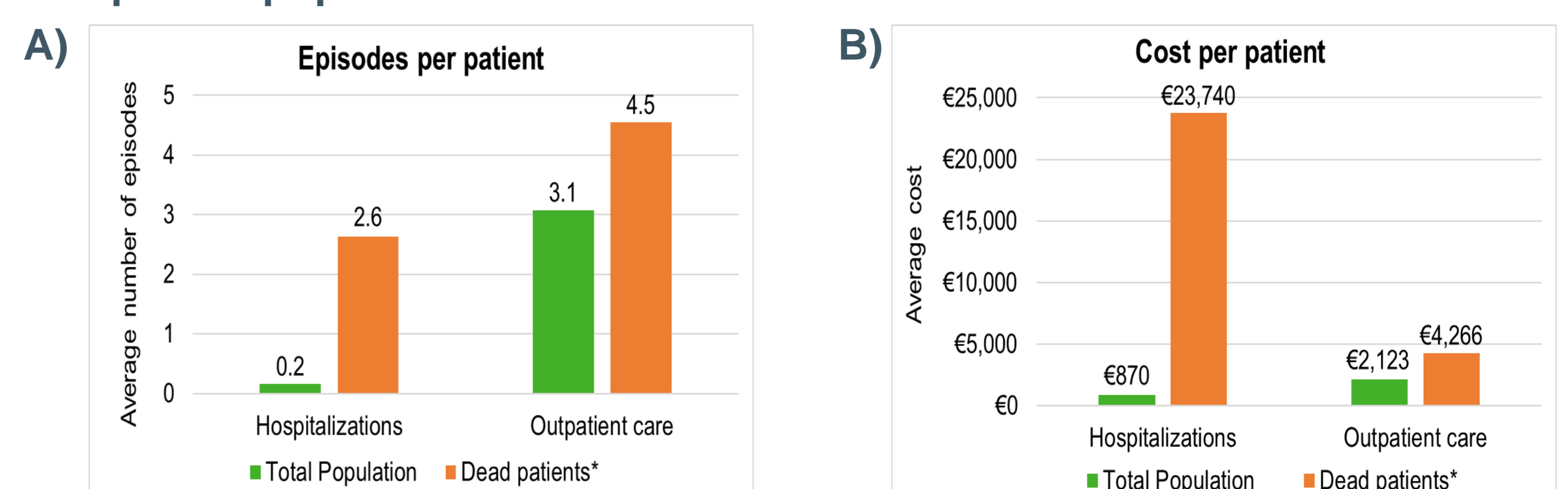
Figure 2. Inpatient (A) and outpatient care (B): most frequent procedures



0HB6XZZ: Excision of Back Skin, External Approach; 0JB70ZZ: Excision of Back Subcutaneous Tissue and Fascia, Open Approach; 0WB00ZZ: Excision of Head, Open Approach; 30233N1: Transfusion of Nonautologous Red Blood Cells into Peripheral Vein, Percutaneous Approach; 3E03305: Introduction of Other Antineoplastic into Peripheral Vein, Percutaneous Approach; 3E0330M: Introduction of Monoclonal Antibody into Peripheral Vein, Percutaneous Approach; 3E03329: Introduction of Other Anti-infective into Peripheral Vein, Percutaneous Approach; 3E04305: Introduction of Other Antineoplastic into Central Vein, Percutaneous Approach; B020ZZZ: Computerized Tomography (CT Scan) of Brain; F0824ZZ: Home Management Treatment

- The average hospitalization episodes and outpatient visits per patient were 0.2 and 3.1, respectively. Patients who died during 2016 had a mean of 2.6 and 4.5 hospitalization episodes and outpatient contacts per patient, respectively (Figure 3).
- Total length of hospitalization for the overall sample was estimated in 1,183 days, with a mean of 1.4 days per patient. For those who died, the average length of hospital stay was 47.4 days per patient.
- The overall healthcare costs were estimated in €2,520,431 million, of which €732,480 corresponded to inpatient care and €1,787,951 to outpatient care. Mean cost per patient was €2,993, that includes €870 and €2,123 for inpatient and outpatient care, respectively. The subpopulation of patients who died during 2016 had a total cost per patient of €28,006, with €23,740 and €4,266 for inpatient and outpatient care, respectively (Figure 3).

Figure 3. Number of episodes (A) and cost (B) per patient by type of care and patient population



*Patients who died during the study period

CONCLUSIONS

- Melanoma cancer patients had an hospitalization rate of 0.2 and an outpatient care rate of 3.1 during the study, causing a mean associated cost per patient of €2,993.
- Mean cost per died patient during a hospital episode (€28,006) was nearly ten times higher than the mean melanoma cancer population cost (€2,993).
- Real-world data studies provide useful information regarding the use of healthcare resources for a range of diseases with regular contact to inpatient or outpatient care.
- Melanoma cancer patients caused an important use of healthcare resources and associated costs for hospitals in Spain.

(1) SEOM. Las Cifras del Cáncer en España 2018. (2) Galcerán J, et al. *Clin Transl Oncol* 2017;19(7):799-825. (3) Globocan 2018. *Global Cancer Observatory. International Agency for Research on Cancer 2018*. (4) Antoñanzas F et al. Cuadernos económicos del ICE. Nº 72 2006: 281-309. (5) Serra-Arbeloa P, et al. *Actas Dermosifiliogr*. 2017;108(3):229-36. (6) Comunidad de Madrid. Portal de transparencia. Datos Estadísticos. Accessed April 2018, available at: <http://www.madrid.org/es/transparencia/informacion-economica/datos-estadisticos>. (7) Series detalladas desde 2002. Resultados por Comunidades Autonomas. Accessed August 2018, available at: <http://www.ine.es/>. (8) Boletín oficial de la Comunidad de Madrid. Lunes 21 de Agosto de 2017. Septiembre 2013.