

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

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BACKGROUND

- Breast cancer is the most commonly diagnosed tumor in women in Spain, and the second cause when male and female are considered, with an incidence estimated in 32,825 for 2018 and rising up to 34,823 (+6,1% increase) in 2025 (1).
- The 5-year prevalence reaches up to 129,928 cases, which mean breast cancer is the most prevalent cancer location including both genders in Spain (1).
- In 2018 it is foreseen 6,421 deaths caused by breast cancer, and it will continue raising in the coming years, up to 6,992 deaths in 2025, considering demographic changes (1).
- Tumors has become one of the most important socioeconomic problems in Spain, and prostate cancer represents a relevant issue to the national health system (2).

OBJECTIVES



The aim of the study is to describe hospital resource use and costs associated for breast cancer patients who attended hospital during 2016 through a healthcare claim database (3).

METHODS

Study design and patients

- Madrid is the 3rd most crowded region in Spain with almost 6.5 million inhabitants, 52% female.
- Retrospective data from the Minimum Basic Data Set (MBDS) of the Ambulatory and Patients' Hospitalization database 2016 of Madrid were used (3).
- Patients were included if they had at least one diagnosis, main or secondary for breast cancer (coded C50 using 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 selected patients was carried out.

Data extraction

- The following variables were recorded and analyzed: 1) Socio-demographic information (age, sex); 2) Number of hospital contacts (hospitalization and outpatient care); 3) Length of stay (days); 4) Main diagnoses and 5) Procedures performed during hospitalization and outpatient care.
- 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 (4).

Statistical analysis

- A descriptive statistical analysis was performed, including the following measures: mean, standard deviation (SD), rate per 100,000 inhabitants and percentage. Total costs and mean cost per patient were calculated in 2018 euros.

RESULTS

- A total of 4,468 patients with breast cancer were identified. These figure implied a rate per 100,000 well aligned with Globocan 2018 incidence reported rate (1).
- 4,441 (99.4%) were women and mean age (SD) at first hospital episode was 59.1 (13.5). All patients caused a total of 1,268 and 34,307 hospitalization and outpatient episodes (Table 1).
- A total of 69 (1.5%) patients died during a hospital episode, it resulted in a rate of 2,1 deaths per 100,000 women population, far below 27,2 deaths per 100,000 according to Globocan 2018 facts.
- Most frequent main diagnoses and procedures are displayed Figure 1 & 2. Burden of breast cancer was 7,236 days of hospitalization (1.62 days per patient) and 27.8 million euros (6,218 € per patient).
- Patients who died during a hospital episode had a higher duration of hospitalization 16.17 days (vs 1.62 days) and total cost 12,485 € (vs 6,218€)

Table 1. Demographic characteristics of patients included in the analysis.

Characteristics	All patients (n=4,468)	Patients who died (n=69)
Age, mean years (SD)	59.1 (13.5)	69.5 (16.2)
Sex – Woman, n (%)	4,441 (99.4)	67 (97.1)
Number of inpatient episodes, n (rate per patient)	1,268 (0.28)	119 (1.72)
Cost of inpatient episodes, total € (mean per patient)	6,018,026 (1,347)	685,429 (9,934)
Number of outpatient episodes, n (rate per patient)	34,307 (7.68)	268 (3.88)
Cost of outpatient episodes, total € (mean per patient)	21,764,407 (4,871)	176,061 (2,552)
Rate per 10 ⁵ inhabitants*	133.0	2.0

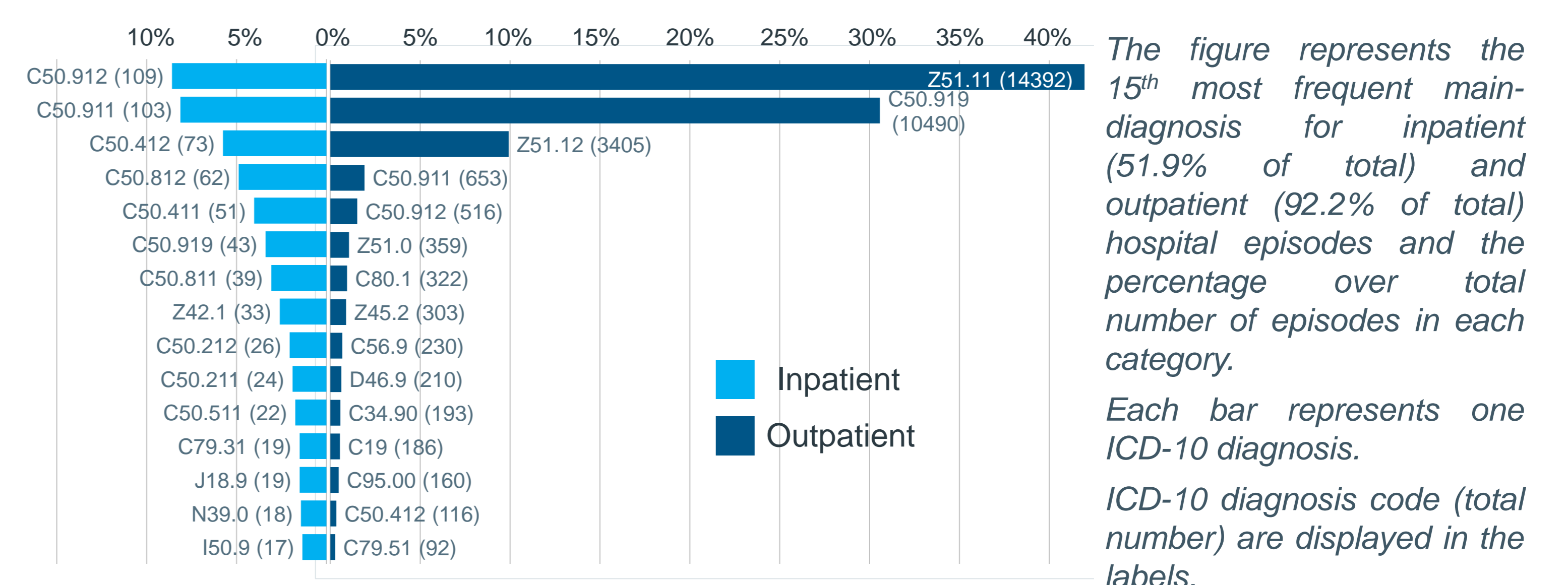
*According to Comunidad de Madrid women population in 2016 (5)
SD: standard deviation

CONCLUSIONS

- Breast cancer patients visit a hospital approximately 8 times per year, causing and associated cost of €6,218 per patient.
- Overall, breast cancer hospital care costs 27.8 million of euros figures out a 0.37% of Madrid healthcare budget (6).
- Patients who died during a hospital episode had less outpatient visits, although they need more hospitalizations and they spent more days (10-fold) in hospital, so the total cost per patient was nearly 2-fold higher than the mean cost per patient of breast cancer.
- Real-world data studies provide useful information regarding hospital resource use for a range of diseases where patients have a regular contact with hospital.

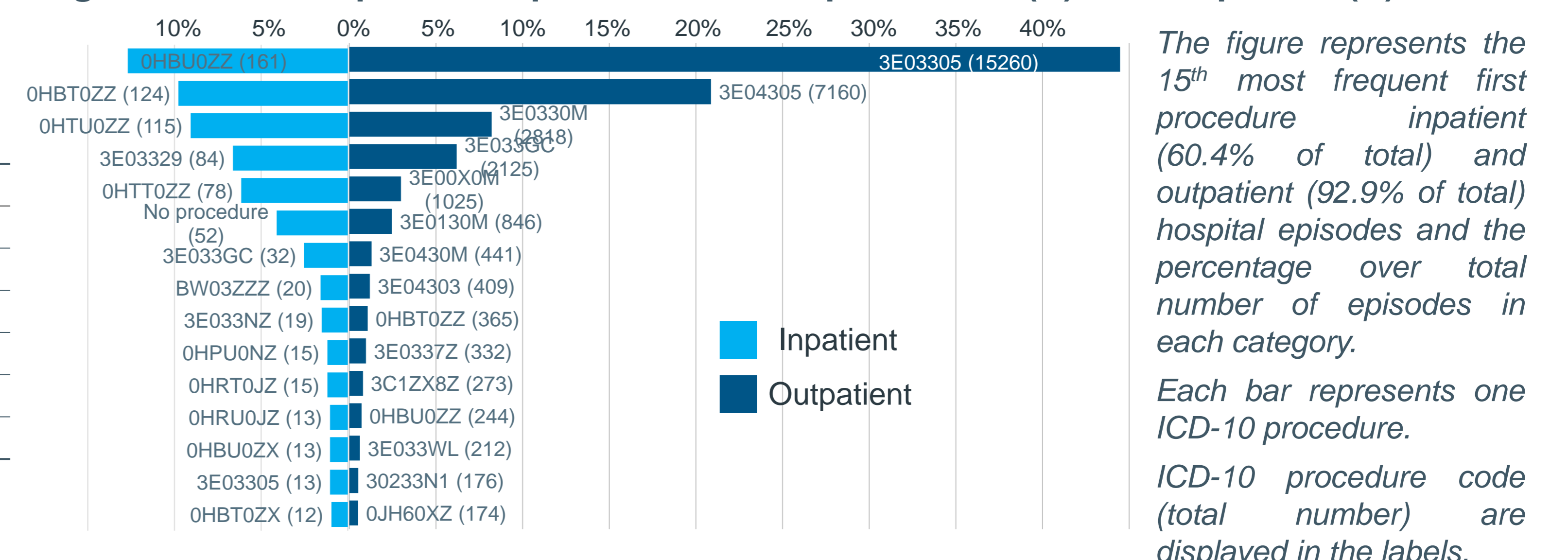
(1) Globocan. Global Cancer Observatory. Cancer tomorrow. Available at: <https://gco.iarc.fr/tomorrow/> (2) Antoñanzas F et al. Cuadernos económicos del ICE. 2006: 281-309; (3) Comunidad de Madrid. Portal de transparencia. Datos Estadísticos. Accessed April 2018, available at: <http://www.madrid.org/es/transparencia/informacion-economica/datos-estadisticos>. (4) Boletín oficial de la Comunidad de Madrid. Lunes 21 de agosto de 2017. (5) Cifras de población. Series detalladas desde 2002. Resultados por Comunidades Autónomas. Accessed in August 2018, available at: <http://www.ine.es/>. (6) Presupuestos Generales comunidad de Madrid 2016. Accessed in October 2018, available at: <http://www.comunidad.madrid/gobierno/transparencia/presupuestos-antiguos>.

Figure 1. Most frequent main diagnoses in hospitalization (A) and outpatient (B) care.



The figure represents the 15th most frequent main-diagnosis for inpatient (51.9% of total) and outpatient (92.2% of total) hospital episodes and the percentage over total number of episodes in each category. Each bar represents one ICD-10 diagnosis. ICD-10 diagnosis code (total number) are displayed in the labels.

Figure 2. Most frequent first procedure in hospitalization (A) and outpatient (B) care.



The figure represents the 15th most frequent first procedure inpatient (60.4% of total) and outpatient (92.9% of total) hospital episodes and the percentage over total number of episodes in each category. Each bar represents one ICD-10 procedure. ICD-10 procedure code (total number) are displayed in the labels.