

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

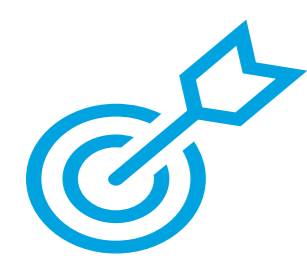
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BACKGROUND

- Bladder cancer is more frequent in men, with an incidence rate of 36.7 per 100,000 (1). 14,677 new cases of bladder cancer were diagnosed in Spain in 2017 and are expected to increase up to 23,296 in 2,030 according to Globocan's projections (2).
- Bladder cancer represents the fourth most prevalent diagnosed tumor in men in Spain after lung, prostate and colorectal cancer (3).

- In 2,017 the 5-year prevalence was estimated in 59,019 (1).
- Mortality rates in Spanish men is 8.2 per 100,000 (3).
- In 2,018 it is foreseen 5,680 deaths caused by bladder cancer, and it will continue raising in the coming years, up to 7,249 deaths in 2,030, considering demographic changes (2).

OBJECTIVES



The present analysis aims to identify patients with bladder cancer who visited hospital during 2,016 and to describe the corresponding hospital resources used and costs through a healthcare claim database (4).

METHODS

Study design and patients

- Retrospective data from the Ambulatory and Patient's Hospitalization database (4) for 2016 of the Spanish Minimum Basic Data Set (MBDS) were extracted. It covers 6.5 million inhabitants as reference population.
- All hospital contacts of patients who had at least one diagnosis for bladder cancer (coded C67, D09.0, and D41.4) using the 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) were collected.

Data extraction

- Socio-demographic information (age and sex), number of hospital contacts (hospitalization and outpatient care), length of stay (days), main diagnoses, procedures performed during hospitalization and outpatient care, and costs associated.

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.

RESULTS

Table 1. Patient characteristics and episodes by type of care.

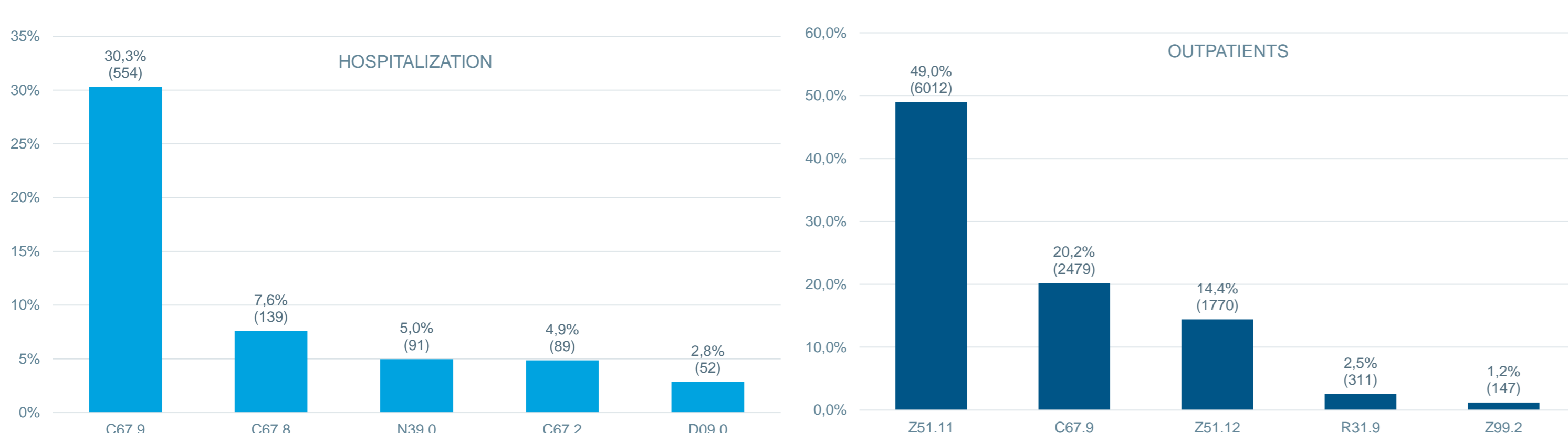
- 2,263 patients with bladder cancer were identified, of which 82,6% were men and mean age (SD) was 71,1 (10,8). Rate per 100,000 inhabitants of patients who contact inpatient or outpatient care was estimated in 43.2, slightly higher than the Spanish incidence rate according to Spanish data of SEOM. Overall, 1,830 and 12,277 hospitalization and outpatient episodes were observed, respectively (Table 1).

Characteristics	Hospitalization (N=969)	Outpatient care (N=1,765)	Total (N=2,263)
Age, mean years (SD)	73.1 (11.0)	70.2 (10.4)	71.1 (10.8)
Sex – Men, n (%)	819 (84.5)	1,452 (82.2)	1,870 (82.6)
Number of episodes, n	1,830	12,277	14,107

*According to inhabitants in Comunidad de Madrid in 2016 (5)
N: number of patients; SD: standard deviation

- 88 (3,9%) patients died during a hospital episode. In that subpatient population, mean age (SD) at first episode was 77.75 (11.0) years and, overall, a total of 415 previous episodes were reported during 2016 before exitus, of which 141 were hospitalizations.
- Most frequent main diagnoses related to hospitalization and outpatient episodes are shown in figure 1; and most frequent procedures performed during the episodes are detailed in Figure 2.

Figure 1. Most frequent main diagnoses in hospitalization and outpatient care.



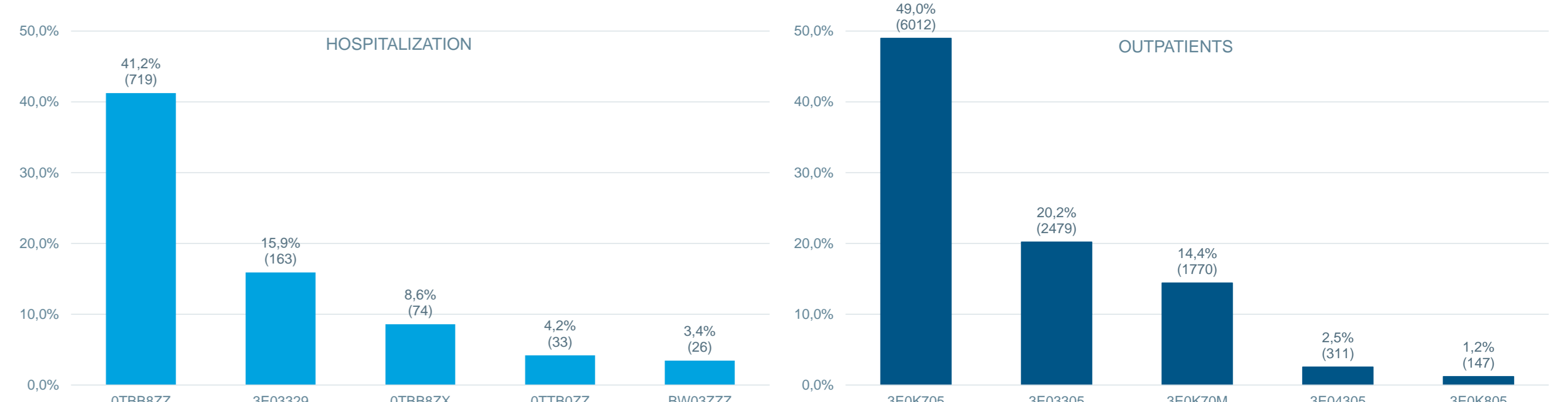
C67.9: Malignant neoplasm of bladder, unspecified; C67.8: Malignant neoplasm of overlapping sites of bladder; N39.0: Urinary tract infection, site not specified; C67.2: Malignant neoplasm of lateral wall of bladder; D09.0 Carcinoma in situ of bladder; Z51.11: Encounter for antineoplastic chemotherapy; C67.9: Malignant neoplasm of bladder, unspecified; Z51.12: Encounter for antineoplastic immunotherapy; R31.9: Hematuria, unspecified; Z99.2: Dependence on renal dialysis

CONCLUSION

- Bladder cancer patients in Madrid attend inpatient or outpatient care more than 6 times per year, causing to the Health System more than €16 million. Patients who died during the study period presented an increased use of inpatient care compared to the overall patient population, leading to a relevant increase in the overall cost per patient.
- Bladder cancer caused a relevant use of healthcare resources, corresponding to 0.21% of the overall health budget for 2,016 in the region of Madrid (6).
- 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.**

(1) Sociedad Española de Oncología Médica (SEOM). Las Cifras del Cáncer en España 2018; (2) Globocan. Global Cancer Observatory. Cancer tomorrow. Available at: <https://gco.iarc.fr/tomorrow/>; (3) <https://www.aecc.es/es/todo-sobre-cancer/tipos-cancer/cancer-vejiga/evolucion-cancer-vejiga>; (4) Comunidad de Madrid. Portal de transparencia. Datos Estadísticos. Accessed April 2018, available at: <http://www.madrid.org/es/transparencia/informacion-economica/datos-estadisticos>. (5) Series detalladas desde 2002. Resultados por Comunidades Autonomas. 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>.

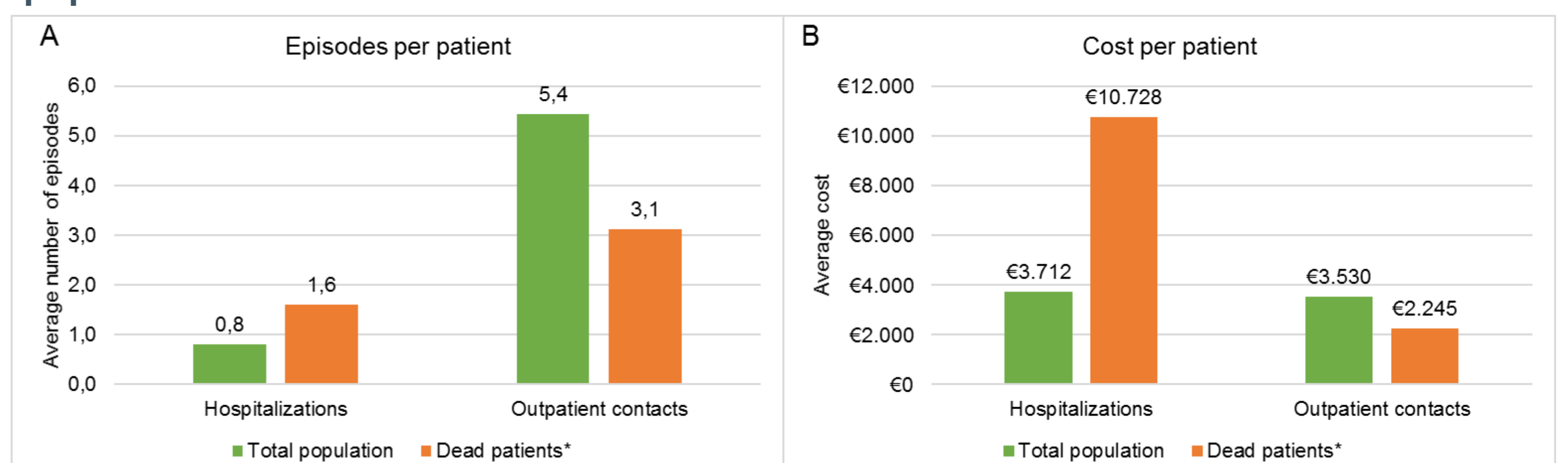
Figure 2. Most frequent procedures during hospitalization and outpatient care.



0TB8ZZ: Excision of Bladder, Via Natural or Artificial Opening Endoscopic; 3E0329: Introduction of Other Anti-infective into Peripheral Vein, Percutaneous Approach; 0TB8ZX: Excision of Bladder, Via Natural or Artificial Opening Endoscopic, Diagnostic; 0TTBZZ: Resection of Bladder, Open Approach; BW03ZZ: Plain Radiography of Chest; 3E0K705: Introduction of Other Antineoplastic into Genitourinary Tract, Via Natural or Artificial Opening; 3E03305: Introduction of Other Antineoplastic into Peripheral Vein, Percutaneous Approach; 3E0K70M: Introduction of Monoclonal Antibody into Genitourinary Tract, Via Natural or Artificial Opening; 3E04305: Introduction of Other Antineoplastic into Central Vein, Percutaneous Approach; 3E0K805: Introduction of Other Antineoplastic into Genitourinary Tract, Via Natural or Artificial Opening Endoscopic

- The average hospitalization episodes and outpatient contacts per patient were 0.8 and 5.4, respectively (Figure 3). The overall length of hospitalization was estimated in 12,285.2 days, and the average per patient came to 6.7 days. For the subpopulation of patients who died during 2,016, the average hospitalization episodes and outpatient contacts per patient were estimated in 1.6 and 3.1 (Figure 3), and the average length of hospital stay per patient who died was 23.6.
- The overall healthcare costs including inpatient and outpatient care are estimated in €16,389,138.5, of which €8,399,941.0 corresponded to hospitalization and €7,989,197.5 to outpatient care. Cost per patient associated to the overall patient population included and to the patients who died during the study period are shown in Figure 3.

Figure 3. Number of episodes and cost per patient by type of care and patient population



*Patients who died during the study period.