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journal homepage: www.elsevier.com/locate/burns

Reimbursement of burns by DRG in four European countries: An analysis

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ARTICLE INFO

Article history:
Accepted 2 May 2011

Keywords:
Burns
Diagnosis-Related Groups
Reimbursement
Length of stay
Europe

ABSTRACT

Purpose: To analyze the German, Austrian, Italian and Spanish Diagnosis-Related Group (DRG)-systems regarding burns.
Methods: We analyzed 78 cases of inpatients with burns which were processed by national DRG-groupers. DRGs were linked to thresholds concerning length of stay as well as reimbursement tables of the respective countries.
Main findings: Fifty-one % of cases showed higher reimbursement in Germany compared to Austria, 55% compared to Italy and 67% as against Spain. Total proceeds are highest in Austria with 1 577 000 €, followed by Italy with 1 569 000 €, Germany with 1 502 000 € and Spain with 902 596 €. No correlation was found between macroeconomic key figures and our data.
Conclusions: International comparison of reimbursement of burns by DRG could be a useful instrument for benchmarking while not depending solely on political decisions or country-specific cost data. For better comparability, hospital indices based on healthcare baskets should be discussed.

1. Introduction

Diagnosis-related group (DRG) is a system to classify hospital cases into groups, which are expected to have similar use of hospital resources. The system has been created by Robert Barclay Fetter and John Devereaux Thompson at Yale University in 1967 [1]. Originally DRGs were not introduced for hospital reimbursement but instead used for management purposes such as measuring, evaluating and controlling patient treatment in hospitals. The first European country to introduce DRGs for hospital financing was Portugal in 1990.

The German healthcare system is characterized by its pluralistic financing system. The Statutory Health Insurance (SHI) is the main financier and insures about 90 percent of the population. The right to compensation is independent of the amount of contributions paid. Health insurance contributions are usually contributed equally by workers and employers. In addition to the Statutory Health Insurance, the Statutory Pension Insurance, Employer's Liability Insurance and the Long-term Care Insurance are further funding sources. Besides, public budgets participate in financing. In recent years there has been an increasing household expenditure on health in Germany. Approximately 36% of Germany's health expenditure in 2009 accounted for inpatient care [2]. The German DRG-system became mandatory for the approximately 2000 hospitals and clinics in 2004. The Institute for the Hospital Remuneration System (InEK) calculates annually a catalogue

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0305-4179/$36.00
doi:10.1016/j.burns.2011.05.002

of case-based lump sums and defines the underlying conditions based on data of 253 reference hospitals on the basis of data from the year before last. Clients are the self-governed partners in health care: The German Hospital Federation, the National Associations of Health Insurers and the Association of Private Health Insurance. In 2009, a total of 1192 DRGs for accounting of inpatient care were available in Germany [3].

As in Germany, pluralistic financing of health expenditure can also be found in Austria. The national health insurance is the most important source of financing and covers 98% of the population. Currently, medicare is financing approximately 50% of health expenditure, whereas 25% are covered by taxes and another 25% is financed by private expenses [4]. Inpatient treatment accounts for nearly 40% of total healthcare expenses [5]. The Austrian ''Leistungsorientiertes Krankenanstalten-Finanzierungssystem'' (LKF-model = DRG-system) was introduced in 1997 for inpatient care. In order to this, these funds are distributed by the LKF, for half of the 270 Austrian hospitals including three quarters of all hospital beds and covering 90% of inpatient treatment. The LKF system can be divided into two areas of financing: on the one side the LKF-core area which is applied unitarily across the country using ''Leistungsorientierte Diagnosefallgruppen'' (LDFs = performance-oriented case groups) and on the other side the LKF-steering area is malleable in the various Austrian states allowing additional consideration of structural criteria. Each LDF exists of a performance-component and a day-component. The first component is based on costs which can be directly assigned to patient treatment (e.g., personnel costs for operations or products consumed during operations). Costs that cannot be referred to single services are summarized in the day-component, depending on the length of stay. As in Germany, the Austrian fixed rate is effective within a time interval which is defined by the lower and upper thresholds of length of stay (LOS) for each LDF. A reduced fixed rate is calculated for patients staying in hospital below the lower threshold of LOS, whereas a digressive surcharge per day is provided for those patients exceeding the upper threshold of LOS. The Austrian Health Commission is responsible for the configuration and development of the LKF-model. Determination of reimbursement and thresholds of LOS for 2009 was based on roughly 500 000 inpatient treatments and calculated costs of 20 reference-hospitals between the years 2005–2007. In 2009 a total of 982 LDFs were available in Austria [6].

The Italian statutory health insurance was abolished in the early 1980s and replaced by a National Health Service system along the lines of the British sanitary model. The country is divided in supply regions of medical care, where then a sanitary unit organizes the financing of public healthcare facilities and purchasing medical services for the population in the region. Ninety-five percent of this system is tax-financed and the remaining 5% defrayed privately. The regional budgets are distributed based on weighted capitation fees, which are based on age and morbidity structures of the population. In view of rising health care expenditure, the government found itself constrained to introduce elements of competition [7]. The Italian DRG-system is an interregional and national system of lump compensation based on the North American HCFA–DRG-System, existing since 1995. All public and private healthcare facilities for inpatients are obliged to register. However, every region is free to enforce either the national rate or a lower individual tariff. Since January 2009, a total of 538 DRGs are available [8].

The Spanish health care system is a predominantly tax-based system. More than 40% of hospitals are publicly owned, being responsible for almost 70% of all hospital discharges in the country [9]. In the 1990s, cost containment became a major priority and the focus of reform shifted towards changes in financing, organisation and management. Furthermore, most hospital contract programmes were not linked to production levels or quality issues and the economic incentives for accomplishing contractual objectives were weak [10]. One central reformation was change of power from the INSALUD (the National Social Security Agency) to the Spanish Autonomous Communities (ACs). These regional public bodies are in charge of the purchasing health services and managing most of the inpatient and outpatient health care centres directly. A clear separation of purchasing and providing functions only exists in Catalonia, where the purchaser is a public body in form of a Health Trust, the Catalan Health Service, and the providers are a mix of public and private institutions. Therefore, the purchaser does not assume budget deviations, which means that the financial risk is transferred to the providers [11,12]. Other autonomous Spanish communities have a programme-contract with the Health Service Department (fictitious purchaser) and a hospital (provider). They agree upon a catalogue of services that a centre is obliged to supply to the patients belonging to a specific health care area, as well as the volume of activity [13]. The DRG system used in the Spanish National Health System has been mainly developed to be used for the so called Cohesion Fund which was introduced in 2002 to guarantee equal access to health care for the entire Spanish population. It was established for the compensation of ACs when treating patients from a different AC. As there are not enough hospitals with complete patient cost information, estimates rely upon Spanish case-mix data and the distribution of final cost centres using North American weights at cost centre level. In 2009, a total of 612 Spanish DRGs came into use [14].

Per capita health care expenses in Germany amounted to 3737 US$, in Austria to 3979 US$, in Italy to 2870 US$, and in Spain to 2902 US$ in 2009 as compared to 7538 US$ in the United States. This corresponds to 10.5% of Germany's as well as Austria's, 9.1% of Italy's and 9.0% of Spain's Gross National Products as compared to 16% in the United States [15].

Burns are frequently causing situations requiring elaborate and expensive therapies with multiple interventions in specialized institutions. Therefore, a differentiated and cost-oriented reimbursement is indispensable. In the following investigation the German and Austrian reimbursement systems are compared regarding inpatient treatment of burns.

2. Materials and methods

We looked at all inpatients with burns covered by the Statutory Health Insurance being reimbursed by DRG only in our clinic in 2009. Patients covered by the Employer's Liability Insurance which remunerates by daily rates and not by DRG were excluded from our series. Patients that were not