12ª cnes
conferência nacional de economia da saúde
Lisboa de 13 a 15 de Outubro, 2011
Fundação Calouste Gulbenkian
http://12cnes.apes.pt

An application of the VLAD methodology to Portuguese hospitals – the case of pneumonia admissions

Francisco Gonçalves[1], Bernardo Marques[2], Alberto Freitas[2], Armando Teixeira-Pinto[2]

[1] CINTESIS/ISCA, FMUP/UA, Porto/Aveiro, PORTUGAL
[2] CIDES, FMUP, Porto, PORTUGAL

Contact: francisco.goncalves@ua.pt

Objectivos (Objectives): This study pursues the following objectives: -It presents, for the first time (to the best of our knowledge), an application of the VLAD methodology for the Portuguese public hospitals' universe; -It analysis the trends for pneumonia (main diagnosis), in the period 2000-2009.

Metodologia (Methodology): Data The data proceeds from the database of hospital admissions from the Portuguese Health Administration Services (ACSS), and comprises all the admissions at public hospital between 2000 and 2009. The inclusion and exclusion criteria of patients are: - Principal diagnosis of pneumonia; - Records from 1st January 2000 through 31th December 2009; - Acute patients; - Patients must have spent at least one night in hospital; - Patients age must be between 20-89 years old; - Length of stay must between 1-30 patient days; - Transfers in and out must be excluded; Before plotting the VLAD (and calculation the individual scores for the patients), all cases were risk adjusted by the following criteria: age, septicaemia, malignancy, dementia (including Alzheimer's disease), Parkinson's disease, dysrhythmias, heart failure, hypotension and shock, cerebrovascular disease, other chronic obstructive pulmonary disease, liver disease, ulcer of lower limb or decubitus ulcer, renal failure (as from Duckett et al, 2008). Method Following Duckett, S., M. Coory & K. Sketcher-Baker (2007), the first step, before plotting the VLAD, was to calculate, for each patient, the expected risk (probability) of dying, adjusting for those risk factors – that are specific to the pneumonia problem. It is estimated using a logistic regression model for the index month plus the previous 11 months of data. Next, the expected risk is subtracted from the observed outcomes (coded as 0 or 1 for presence or absence of the outcome) and plotted sequentially.

Resultados (Results): Results Our plot – for Hospital de São João, the largest in Northern Portugal - reveals an interesting pattern (see figure 1). In fact, from 2000 to 2004 the observed downward movement indicates that the number of deaths was greater than that expected. In 2005, a new pattern arises and the observed upward movement of the chart indicates that, for the patients in question, the number of deaths was less than that expected.

Conclusões (Conclusions): We were able to show, by using VLADs, that possibly, an administrative decision that led to the merger of 3 independent wards and their staff, has had a significant impact in the quality of care. Moreover, VLADs were shown to be useful for identifying patterns and changes in the quality of care in a Portuguese setting. In the future we will improve our explanations and expand the application of this technique.