The implementation of an All Patient Refined DRG grouper in Portugal

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Introduction

The DRG patient classification system is implemented in Portugal since 1989 for production analysis and hospital financing, with different DRG grouper versions being used over the years. It started to be used only in inpatient production and, presently, it includes also ambulatory surgery and some medical procedures. Within the hospital purchasing system, production being financed through DRG amount, nowadays, to more than 50%.

The change to ICD10/CM PCS and the need to obtain more information about the patients being treated in hospitals determined that, in 2015, an All Patient Refined DRG grouper (APR) should be implemented. The way hospital production is characterized using this kind of grouper differs a lot from the way it was with the All Patient version used until December 31st 2014, opening new analysis and financing opportunities but also bringing several challenges both for the providers and for the Ministry of Health. By subdividing each episode into severity and risk of mortality levels an array of new analysis are possible.

Methods

In order to study the impact of a transition to a APR DRG version, the 2012 and 2013 hospital national data basis was grouped in both All Patient DRG (AP) version 27 and APR version 31, in a total of almost 3,5 million episodes. Several analysis were carried out in order to understand the differences between the two systems, with correlations tests being carried out between several variables. Length of Stay Adjusted Index and Mortality Adjusted Index were calculated. Finally, the impact in financing was measured, considering the new production distribution, trim points and relative weights compared to the ones being used.

Results

The APR DRG grouper has more homogenous groups with designations closer to the clinical expertise than an AP grouper. A higher concentration of episodes is possible, with 27,5% of the whole inpatient production being grouped into 8 DRG (spread among the different levels of severity), whereas with the AP version only 22% was grouped into 8 DRG.

Not all episodes classified into cc and cc major DRG in AP are classified into the APR levels of severity 3 and 4. In fact, almost 52% of these episodes are grouped into levels 1 and 2 of severity in the APR. Additionally, on a whole, hospital production results mainly in a low severity level, with 83% of the episodes being grouped in severity levels 1 and 2.

Generally, LOS rises with the increase of the level of severity (with LOS = 4,5 days in level 1, and 23,5 days in level 4). However, there is no strong correlation between LOS and the level of severity. On the other hand, some hospitals demonstrate a strong positive correlation between the diagnosis and procedures number and the severity level.

Length of Stay Adjusted Index indicated that although some institutions manage to have lower LOS, despite a higher concentration of patients in higher levels of severity.

Almost 88% of the episodes are grouped into risk of mortality levels 1 and 2 with, generally, mortality rate rising with the raise of risk of mortality level. Nevertheless, there is a weak positive correlation between mortality rate and risk of mortality rate, with some hospitals with a negative correlation.

Mortality Adjusted Index indicates that some hospitals manage to have a better performance despite dealing with patients with a higher risk of mortality.

Conclusions

An APR grouper needs more detailed information (in terms of diagnosis, procedures and patient characteristics), in order to split the production into different degrees of severity and risk of mortality. Although ICD9CM coding is well spread within the Portuguese NHS hospitals, the main lack of information is in the patient process itself, which compromises an adequate coding. An effort of clinical records quality improvement has to be made and a grouper such APR is a good tool to begin this process and revise
clinical records. Such an high concentration of episodes in severity levels 1 and 2 may, also, indicate an hospital tendency to code attending to the grouping result (and financial return) rather than to the reality of the care delivered. A grouper such as APR, where it is more difficult to guess the DRG result, will deviate attention from this issue and enable hospitals to focus on the register quality.

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