CONFERENCE ABSTRACT

Risk stratification at primary care centres in Valencia (Spain) to activate integrated care pathways for elderly patients with chronic conditions

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Introduction: The activation of integrated care pathways is not always easy and is time-consuming, so the standardized use of stratification tools (ST) can support health care professionals in decision-making processes. Several ST –developed and validated in the United States– have been implemented in the Valencia Region (Spain) at primary care (PC) centres to identify elders with multimorbidity at risk of suffering future hospital admissions (FHA). In spite of the usefulness of these instruments, it would be recommended to apply STs which have been specifically designed on the basis of the Spanish healthcare system and the characteristics of its population. Thus, the objective of this study was to design a ST aimed at the identification of elders at risk of hospital admissions in the following 12 months in the Valencian Healthcare System.

Methods: The study started with the organization of focus groups (FG) with six multidisciplinary PC professionals aimed at selecting potential variables to be included in the ST. From the FG's results a retrospective study was carried out with the objective of identifying the most significant variables. These variables were tested in a sample of 107 elders. In the last stage, the combination of variables derived from the previous steps was tested in a sample of 1,000 patients in order to select a final combination of variables and to build a predictive algorithm through binary logistic regression analysis.

Results: A set of 13 potential variables to be included in our ST were identified in the FG. These variables comprised data on socio-demographics, clinical and social aspects and registers on the previous use of health resources. As part of the retrospective studies, binary logistic regression analysis determined that the following variables were statistically significant as predictors of FHA: 'chronic respiratory disease' (OR= 2.32, p= 0.015), 'chronic heart disease' (OR= 2.10, p= 0.019), 'palliative care' (OR= 22.53, p= 0.04), and the 'number of previous visits to emergency department at hospital' (OR= 1.82, p< 0.001). The model derived a risk score from 0 to 1 for each patient, classifying patients as high risk of FHA at a risk score threshold of 0.5 or higher. The model had a sensitivity of 42% and specificity of 96% and the AUC was 0.76.

Discussions: The model developed within this study has shown an optimal performance, and an acceptable ability to identify patients at high risk of FHA who really were admitted

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(sensitivity of 42%), an excellent ability to identify patients at low risk who really did not suffer any admission (specificity of 96%). The accuracy detecting patients was similar to other comparable studies or even higher with reported AUC of 0.764. Moreover, the model incorporates variables that can be collected automatically from electronic health information systems (eHIS). Furthermore, the experts participating in the FG highlighted some social variables – usually not registered within eHIS – as determinants of health, especially in elders with chronic conditions (such as availability of knowledge and skills for appropriate self-care, social and/or family support or economic difficulties). Thus, it is proposed a 2-phase stratification system: the first one will calculate the developed algorithm through eHIS, and the second one will assess social variables by consulting the professional of reference.

Conclusions: The final predictive model is composed by variables available at eHIS, so it can be easily introduced into health administration system of the Valencia Region. From this screening and decision-making support ST, professionals will be able to implement a wide range of care plans in accordance with patients' health and social needs which can potentially improve quality of care and favor that older people can remain at home longer.

Lessons learned: It is possible to design new ST on the basis of the target population profile and the characteristics of the healthcare system.

Limitations: The sample is not representative of the whole elderly population in the Valencia Region. Moreover, the sensitivity of the model is limited.

Suggestions for future research: Future studies are needed to validate these results with a larger sample from the Valencia Region and other regions in Spain. Moreover, it would be interesting to explore their applicability in other health and social care settings and even in other European contexts assessing the degree of similarity or variance of discriminating factors or the available electronic data sets. Currently, we continue this study developing an integrated care protocol to be implemented in those patients identified as high risk of suffering FHA by a multidisciplinary team of PC professionals (general practitioners, nurses and social workers).