Casemix systems and patient's needs: A systematic literature review on the value of functioning information in reimbursement systems

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Introduction

Current casemix based payment systems for health services need to ensure that payment rates adequately account for actual resource consumption based on patients' needs for services. However, the challenge remains that current diagnosis based casemix systems, such as the DRGs, do need to have the capacity to explain legitimate differences in health service utilization, costs and length of stay in their casemix groupings. It has been argued that functioning information, as one important determinant of health service utilization, is valuable to be taken into account when developing casemix classification systems. In addition, it has been shown, that functioning information complements diagnosis information and reflects patients' need for services more adequately than focusing on disease and intervention aspects alone. However, there has to date been little systematic collation of the evidence on whether the addition of functioning information into existing casemix systems adds value to those systems with regard to the predictive power and variation explained by the groupings of these systems. Thus, the objective of this study is to examine the value of adding functioning information into casemix systems with respect to various outcomes and to discuss the implications of these results for optimizing financing of health services. More specifically, the aims of this study are to identify how functioning information is integrated into casemix systems and to review the value of more systematically adding functioning information into casemix systems with respect to various outcomes.

Methods

We performed a systematic literature review using keywords related to functioning and casemix systems. Peer-reviewed studies, published between 1977 and 2014 were searched in 6 different databases covering medical, social and economic disciplines. We extracted information about study aims, design, country, setting, methods, outcome variables, study results, and information regarding the authors' discussion of results, study limitations and implications.

Results

In total, 2225 studies were reviewed out of which 14 studies were included. The results provide evidence that adding functioning information into casemix systems fosters homogeneity in casemix groups and improves predictive ability with regard to various outcomes, including costs, mortality or discharge destination. The collection and integration of functioning information was heterogeneous across studies. Results suggest that, in particular, DRG groupings for frail elderly or severely functioning-impaired patients benefit in their precision from the addition of functioning data.

Conclusions

Integrating functioning information into casemix systems is one promising approach to improve those systems' predictive ability and to adequately group cases with similar resource use. Building upon a common framework for operationalizing functioning information based on international standards could be one option to proceed. This would require ensuring that such tools for operationalization of functioning and related measures are available and fit for purpose in the specific casemix systems.

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