MULTI-CRITERIA DECISION ANALYSIS FOR EVALUATING NEW MEDICINES IN HEALTH TECHNOLOGY ASSESSMENT FRAMEWORK ANALYSIS

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Background Escalating medicine prices have catalysed the generation of numerous ‘value frameworks’ with the aim of informing payers, clinicians and patients on the assessment and appraisal process of new medicines for the purpose of coverage and treatment selection decisions. Furthermore, medicine evaluation has to deal with more uncertainty, which highlights a need to determine the value of pharmacologic innovation from many issues. Multiple-criteria decision analysis (MCDA) has appeared as a methodology to address the limitations of economic evaluation in health technology assessment (HTA). However, there is limited empirical evidence from real-world applications.

Purpose The objective of this study was to review the use of the MCDA methodology as a tool for the HTA of new medicines in Europe and to determine the differences between the diverse published MCDA frameworks.

Material and methods PubMed/MEDLINE, Scopus and Web of Science databases were searched for articles published up to December 2017. Two reviewers independently screened the extracted articles for eligibility. Thirty-four articles were extracted from the full-text assessment. MCDA frameworks were identified, and criteria and use were compared between them.

Results Six main MCDA frameworks were identified from the final article list: The Value Measurement Model, The Probabilistic Model, the EUnetHTA core Model, the EVIDEM model and the Advance Value Model.

The framework models identified have common approach criteria with an impact on the treated disease, safety and clinical efficacy of medicines. Perspectives in the assessment of economics, social and ethical issues were frequent but with different approaches.

Conclusion MCDA methodology is not yet used in most European countries. Differences in criteria representation between identified frameworks demonstrate the lack of consensus in MCDA use with the HTA decision-making of new medicines. Further research is needed to optimise its use as part of policymaking.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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OPTIMISATION OF SURGICAL PROCEDURAL-KIT SETTING

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Background The Satellite Pharmacy aims to create a control management model in the use of necessary medical devices (MD) during surgical procedures and allestiment of procedural-kit containing the devices for each intervention. The planning of kit ensures the appropriateness, to monitor consumption and expenditure of the devices used, and provides useful support for the definition of requirements, budget management and risk management activities.

Purpose Our goal is the standardisation of materials, in view of the appropriateness of use of MD to improve the best clinical practice and a subsequent reduction in costs.

Material and methods The Pharmacy has collaborated in the setting of the material to be included in kits, together with the Structural Units, the Departments of Health Professions and the Directorate of Presidium. The kits, codified and associated with a usual intervention name and an ICD9CM, are used according to an established schedule. We selected the most frequent surgical procedures for each specialised branch. All the data have been collected in a single database; the surgical branch; the type of intervention; and the material used.

Results In 2016 we set up 280 types of kits for 26 781 interventions; in 2017, 281 types of kits for 26 272 interventions; and in 2018, 262 types of kits for 12 309 interventions. The new management of MD, using radiofrequency identification (RFID) technology, consists of applying a radiofrequency label on each material, allowing the tracing of each article with important information such as the lot and the deadline. This process reduces clinical risk and provides data on consumed devices from kits and those that are taken extra-kit. We analysed the consumption of extra-kit material in different surgical procedures. Specifically for thyroidectomy surgery, we found consumption of 50% extra-kit material in 2016, while in 2018 the figure was only 20%. A 30% reduction in the use of extra-kit material translates into the optimisation of kit-setting by RFID and an improvement in clinical practice.

Conclusion The optimisation of the material contained in the kits, which are constantly evolving due to obsolescence or new surgical practices, permit a standardisation of materials, increasing the appropriateness of MD and a general reduction in costs.

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MEDICAL DEVICES MANAGEMENT: CONSUMPTION IN SURGICAL PRACTICE WITH RADIO FREQUENCY IDENTIFICATION SYSTEM

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Background The Satellite Pharmacy analyses the organisation, processes, information flows and related to the management of materials, mainly optimising the preparation of the
Optimising inventory management in a hospital pharmacy

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Background In a multidisciplinary hospital, inventory management involves a difficult balance between the risk of running out of stock and the cost of stock. We therefore implemented a new inventory management method in December 2017, taking into account the Pareto law.¹

Purpose The purpose of this economic study was to determine which inventory management model is the most economical.

Material and methods Drug orders previously placed when the safety threshold was reached were grouped by laboratory. A monthly schedule of laboratory orders had been published so that high-cost drugs were processed at the beginning of the month. Quantities ordered made it possible to obtain a stock equivalent to 1 month of consumption. Stock’s value was evaluated with MAGH2 management software retrospectively over the first 5 months of the years 2017 and 2018. During the same period, monthly orders made were evaluated. We performed a statistical test comparing stock value averages before and after management change. We compared the overall cost of placing orders before and after this management change.

Results The average decrease in the stock’s value observed after modification of inventory management mode is 38%. The difference between the averages observed before and after this change is significant at alpha risk=5% and the assumption that the value of the stock is significantly lower when the Pareto law is taken into account is verified. Order’s cost was evaluated at €60 per order. Before implementation of the monthly calendar, grouping specialties of the same laboratory in a single day, the average number of monthly orders was 258. Then the average number of monthly orders decreased to 202. The average monthly cost of placing an order has been reduced by €3360 thanks to the monthly order calendar.

Conclusion This inventory management method has enabled our domestic pharmacy to reduce the cost of holding stock, limit the number of stockouts at the pharmacy and reduce the overall cost of placing orders. It would be interesting to complete this study by accounting for the reduction in billing time resulting from the reduction in the number of invoices.

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Abstracts

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