Cost-utility analysis or equivalent income approach to evaluate healthcare programs: what impact on allocation recommendations ? A tutorial.

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Abstract

Context : Since the late 2000s, various approaches have been explored to adapt health technology assessment methods to take into account distributive principles. This article deals with one of these innovative methods, i.e the Equivalent Income (EI) approach. The EI approach directly takes into account individual preferences regarding health by valuing health outcomes in monetary terms. It also enables to incorporate varying degrees of societal aversion to health and income inequalities.

Objective : The article proposes a generic Markov microsimulation model to illustrate in a didactic way how the EI approach can be implemented and to what extent it can lead to recommendations different from those when using Cost-utility analysis (CUA).

Methods : The model is an adaptation from Krijkamp et al. (2018), which simulates and compares two strategies to treat a hypothetical disease. A first step aims to estimate, for each individual of a representative sample of the French population, during the considered time horizon, evolution of their health status, as well as health care consumptions. A second step is to simulate changes in individual income, willingness-to-pay, contribution to the health insurance and finally individual EI. Individual EI are then aggregated into a social welfare function (SW) incorporating different degrees of inequality aversion.

Result : Allocation recommendations based on the EI approach and the ACU are compared according to different scenarios elaborated to highlight differences between the two approaches.

Conclusion: The context in terms of health inequality regarding the prevalence of the disease and the health care funding system can lead to different recommendations with the EI approach, while the CUA is not sensitive to such information.