

Using stochastic multicriteria acceptability analysis to assess the cost-effectiveness of healthcare interventions: a case study in heart failure

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Abstract

In cost-effectiveness analysis, two or more alternatives (e.g. medical devices, drug therapies, screening strategies) are evaluated in terms of their costs and effects. Using a fixed substitution rate λ at which society is willing to trade costs for effects or visa versa, the scores of each alternative are combined in a single outcome measure, called the net monetary benefit (NMB). Decision support is provided by calculating for each possible value of λ the probability $p(\lambda)$ that an alternative has the highest NMB. Although these so-called cost-effectiveness acceptability curves offer a useful way of representing decision uncertainty in the case of two alternatives, their interpretation becomes less clear when three or more alternatives are being compared. In this presentation, I will use data from the COACH study—a multicenter, randomized, controlled trial in which 1023 patients were enrolled after hospitalization because of acute heart failure—to show how stochastic multicriteria acceptability analysis (SMAA) can be used to provide increased decision support in situations where a decision maker has to choose between more than two treatment strategies.