Applying multi-criteria decision analysis for healthcare decision making

Maarten J. IJzerman | PhD

About the speaker

Is a full professor of clinical Epidemiology & HTA and chair of the department Health Technology & Services Research at the University of Twente, the Netherlands. In 2013 and 2014 he has been the acting Scientific Director of MIRA, Institute for Biomedical Technology and Technical Medicine.

Maarten IJzerman received his MSc in 1993 in Biomedical Health Science at the University of Nijmegen, Faculty of Medical Sciences and a PhD in Biomedical Engineering at the University of Twente in 1997. Maarten and his team work on methods to evaluate the benefits of diagnostic and imaging technologies and on the application of outcomes research and decision analytic models to predict health economic impact of medical technologies in development. The early assessment research program intends to further enhance the revenues of public and private spending in biomedical research. An important methodological contribution is made in the use of multi-criteria decision models to elicit stakeholder- and patient preferences for health outcomes and technology. He has more than 130 peer-reviewed articles in the intersection of engineering, medicine and outcomes research.

Maarten IJzerman is a visiting adjunct professor at Case Western Reserve University in Cleveland (USA) and serves on numerous national and international boards and scientific committees. Maarten IJzerman is a member of the ISPOR board of directors 2013-2015 and is a member of the ISPOR Health Science Policy Council from 2015-2018. He is chair of the Committee for revising the Dutch Dutch Pharmacoeconomic guidelins (ZINL) and co-chair of the ISPOR taskforce Multi-Criteria Decision Analysis (MCDA). He is a member of the ISPOR taskforces on Simulation Modeling and Statistical Analysis of Conjoint studies. Since 2013, he initiated GITHE (Global Initiative for Translational Health Economics). A joint collaboration between the MIRA Research Institute of the University of Twente (the Netherlands), Antoni van Leeuwenhoek Hospital - Netherlands Cancer Institute (The Netherlands), the Fred Hutchinson Cancer Research Center in Seattle (USA), the University of York (UK), UMIT in Hall (Austria) and CRP-Santé and EPEMED (both based in Luxembourg).

Originating from their research program, Maarten IJzerman initiated the University spin-off company PANAXEA b.v. in 2010.

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Abstract

Regulators of medicines are facing increasing pressure to make their deliberations concerning the benefits and risk more transparent, scientific and patient-centric. Given that both benefits and risks are often measured via multiple (often interrelated) outcomes, any attempt to estimate preferences across benefits and risk must take into account the multiple criteria available. Multi-criteria decision analysis (MCDA) is a technique that stems from operations research and decisions sciences. In MCDA a decision problem is structured into a hierarchy of attributes followed by a series of pair-wise comparisons to obtain attribute weights directly from patients (and potentially any other stakeholder). In recent years MCDA is increasingly being applied to health care decisions, and health care regulators (e.g. EMA, FDA). HTA agencies (e.g. IQWiG, ZINL and NICE) have also expressed interest in evaluating and adopting the method to guide their benefit-risk and benefit-cost analyses respectively.

This presentation will introduce the basic concepts in Multi-Criteria Decision Analysis and will discuss current applications in Health Technology Assessment. The presentation will share experiences regarding the use of MCDA to guide market access and reimbursement of pharmaceuticals in several jurisdictions. □