Human Health Benefits and Burdens of a Pharmaceutical Treatment: Discussion of a Conceptual Integrated Approach

Abstract:
The effects of a pharmaceutical treatment have until now been evaluated by the field of Health Economics on the patient health benefits, expressed in Quality-Adjusted Life Years (QALYs) versus the monetary costs. However, there is also a Human Health burden associated with this process, resulting from emissions that originate from the pharmaceutical production processes, Use Phase and End of Life (EoL) disposal of the medicine. This Human Health burden is evaluated by the research field of Life Cycle Assessment (LCA) and expressed in Disability-Adjusted Life Years (DALYs), a metric similar to the QALY. The need for a new framework presents itself in which both the positive and negative health effects of a pharmaceutical treatment are integrated into a net Human Health effect. To do so, this article reviews the methodologies of both Health Economics and the area of protection Human Health of the LCA methodology and proposes a conceptual framework on which to base an integration of both health effects. Methodological issues such as the inclusion of future costs and benefits, discounting and age weighting are discussed. It is suggested to use the structure of an LCA as a backbone to cover all methodological challenges involved in the integration. The possibility of monetizing both Human Health benefits and burdens is explored. The suggested approach covers the main methodological aspects that should be considered in an integrated assessment of the health effects of a pharmaceutical treatment.

URI:

Authors:
DEBAVEYE Sam
DE SOETE Wouter
DE MEESTER Steven
VANDIJCK Dominique
HEIRMAN Bert
KAVANAGH Shane
DEWULF Jo

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