Approaches to Consider Spillover Effects Among Significant Others

HTA159

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Conclusion

The consideration of spillover effects among significant others, along with the chosen methodologies, can influence the outcomes of cost-effectiveness analyses and subsequently affect resource allocation decisions.

Aim

To analyze the feasibility, and consequences, of different approaches to consider spillover effects in health economic evaluations and decision-making.

Background

Recently, there has been an increased interest in how to consider spillover effects among significant others in healthcare decision-making. Several HTA agencies recommend or consider including these effects in their health technology assessments, although specific guidelines on how to do so are limited.

Methods

Cost-effectiveness analyses were conducted for two hypothetical treatments of a hypothetical disease using a Markov model with four health states (Figure 1). Treatment 1 was assumed to affect only HRQoL, while Treatment 2 was assumed to affect both HRQoL and mortality. Both treatments were compared to a hypothetical standard treatment. The approaches used are presented in Table 1.

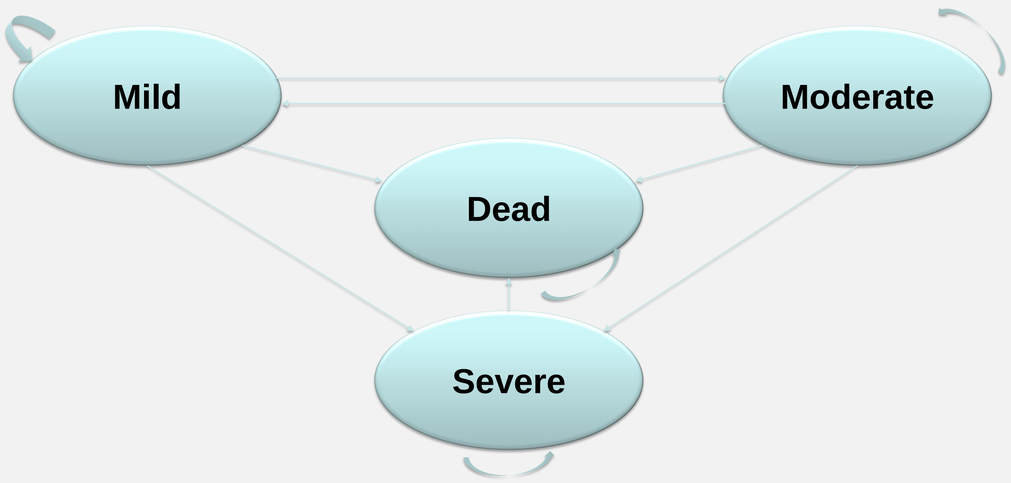

Figure 1. Model structure

Table 1. Approaches in the analysis

Approach	Type of analysis	Parameters describing spillover effects in the approach
Base case		No spillover effects included in the health economic evaluation
2. Spillover effects described separate from the health economic evaluation	Multicriteria/ qualitative analysis	Separate description of HRQoL of significant others to patients with mild, moderate, and severe disease
3. Spillover effects included as a QALY multiplicator	Multiplicator model	Multiplicator of 1.5 on the QALYs gained by the patients
4. Spillover effects included as effects on HRQoL	Additive model	Health state values of significant others to patients with mild, moderate and severe disease
5. Spillover effects included as costs of informal care	Additive model	Costs of informal care related to mild, moderate, and severe disease
6. Spillover effects included as effects on HRQoL AND cost of informal care	Additive model	Health state values of significant others to patients with mild, moderate, and severe disease AND costs of informal care related to mild, moderate and severe disease

Table 2. Model input parameters

Parameters in the model	Value
Annual cost current standard treatment	5 000 EURO
Annual cost new treatment (Treatment 1 and 2)	14 000 EURO
HRQoL patients with mild disease	0.70
HRQoL patients with moderate disease	0.55
HRQoL patients with severe disease	0.25
Average HRQoL Swedish population	0.90
HRQoL significant others – patient mild disease	0.87
HRQoL significant others – patient moderate disease	0.85
HRQoL significant others – patient severe disease	0.80
Annual healthcare costs – patient mild disease	10 000 EURO
Annual healthcare costs – patient moderate disease	12 000 EURO
Annual healthcare costs – patient severe disease	25 000 EURO
Annual cost informal care – patient mild disease	8 000 EURO
Annual cost informal care – patient moderate disease	12 000 EURO
Annual cost informal care – patient severe disease	14 000 EURO
Discount rate effects and costs	3%

Results

For Treatment 1, the base case ICER was 73,500 EUR/QALY, varying from 49,000 EUR/QALY to the base case value. For Treatment 2, the base case ICER was 81,600 EUR/QALY, varying from 35,800 EUR/QALY to 99,400 EUR/QALY depending on the approach.

For the treatment with an effect on mortality (Treatment 2), the approaches including HRQoL of significant others in the model (4 and 6) influenced the ICER in different directions depending on the assumption regarding what happens with the significant others' HRQoL when the patients die. With the approach including only costs for informal care in the model, the direction of the impact on the ICER depended on whether the treatments influenced mortality or not.

Table 3. Results cost-effectiveness analysis

Approach	Treatment 1: effect on HRQoL	Treatment 2: effect on mortality and HRQoL
Base-case	73 500 EUR	81 600 EUR
2. Multicriteria/Qualitative	73 500 EUR	81 600 EUR
3. Multiplicator	49 000 EUR	54 400 EUR
4. Additive HRQoL	63 900 EUR	35 800 EUR[1]/ 85 800 EUR[2]
5. Additive – Costs informal care	56 700 EUR	94 500 EUR
6. Additive – HRQoL and costs informal care	49 300 EUR	41 400 EUR[1]/ 99 400 EUR[2]

[1] The significant others leaves the model when the patient dies. [2] The significant other "regains" a HRQoL of 0.9 when the patient dies.

References

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