Attention-deficit/hyperactivity disorder: are all relevant costs, benefits and outcomes being captured in economic evaluations?

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INTRODUCTION

1. Attention-deficit/hyperactivity disorder (ADHD) is associated with both a personal and a societal economic burden. In adult ADHD, economic consequences include healthcare resource utilization and productivity loss (Figure 1), which may persist into and/or have an impact in adolescence and adulthood.2,3 As a result, economic studies of AD/HD are essential to support evidence-based decision-making.

2. The targeted search of the six national HTA agency websites yielded two publications that have implications in modeling of ADHD outcomes.4

3. The secondary objective was to identify the requirements and recommendations of economic models and the studies supplying data into those models.

4. The following databases were searched via the German Drug Information Agency's (DIMDI) database server (http://www.dimdi.de):

   - eight German-language databases (CORDIS, g&g gmbh Muenchen, WEDAT, INCLUDEIT, German publisher databases, DHG Datenbank, PDS, SOMED)
   - nine prominent global HTA agency websites were searched separately (UK NICE, including the NICE HTA Programme website; Germany, DIWz, Canada (DACEH, Spain-Catania, CANRE, Sweden (SBU and VG))

5. Search terms covered the economic consequences of ADHD, cost-effectiveness, pharmaco-economic and economic modeling as inclusion criteria. The search was not limited by time, age of population, type of treatment or type of outcome measurement. Articles were excluded if:

   - they were not related to ADHD (e.g., if the population had pre-existing conditions or if the data had been previously published).
   - they were not written in English.

6. The review covered the period from the start of each database up to September 2012.

7. Key information relating to the models’ structure was then extracted from the publications identified (see Table III).

METHODS AND SEARCH STRATEGY

1. A systematic literature review of economic evaluations of ADHD therapies was undertaken. The database searches were performed in the German Drug Information Agency's (DIMDI) webinterface:

   - eight German-language databases (CORDIS, g&g gmbh Muenchen, WEDAT, INCLUDEIT, German publisher databases, DHG Datenbank, PDS, SOMED)
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RESULTS

1. In total, 265 publications met the search criteria. Exclusion criteria were assessed from the abstracts and/or full-text if necessary. From the full-text, 18 articles were excluded because economic models were described and/or the study population was not appropriate for the target population (see Figure 2). The search terms covered the economic consequences of ADHD, cost-effectiveness, pharmaco-economic and economic modeling as inclusion criteria. The search was not limited by time, age of population, type of treatment or type of outcome measurement. Articles were excluded if:

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2. The targeted search of the six national HTA agency websites yielded two publications containing economic evaluations of ADHD therapies.4

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CONCLUSIONS

1. The economic and societal impact of ADHD therapies may be understudied due to the following shortcomings of the currently available economic models:

   - Models are not currently using/applying all relevant outcomes known to be associated with ADHD and its treatment.

   - Time horizon

   the models are limited by the availability of data from randomized controlled trials, only economic benefit over a short time horizon (e.g., 1-2 years), and not all available, therefore, to demonstrate the long-term costs and benefits of treatment in a chronic disorder that can persist from childhood/stemence to adulthood.

   - The only quantitative economic model of ADHD separating adulthood into adulthood groups to assess strategies to prevent SCD does not consider treatment benefits.

   - There is any potential way to improve health economic models for ADHD by using a more comprehensive set of outcomes including non-clinical and societal benefits and by using a longer time horizon (e.g., 10-20 years)

   - This would require investment in generation of sufficiently long-term data of the relevant outcomes that are meaningful in ADHD.

   - The majority of economic models of ADHD were developed to evaluate interventions to prevent SCD in stimulant-treated patients. They demonstrated no economic benefit of SCD avoidance.

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