CORRECTING FOR COMPENSATING MECHANISMS RELATED TO PRODUCTIVITY COSTS IN ECONOMIC EVALUATIONS OF HEALTH CARE PROGRAMS

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OBJECTIVES: In economic evaluation of health care programmes, productivity costs are often overestimated, because compensation of lost work is neglected. This study tested the conclusions of a small previous study (Severens et al. 1998) which indicated that short-term work absence often is compensated for during normal work hours, thereby leading to limited productivity costs.

METHODS: We studied work absence and compensation of lost work in five different patient populations (psoriasis, low back pain, chronic fatigue syndrome, rheumatoid arthritis and persistent dysthymia) and one employee population (workers of a pharmaceutical company).

RESULTS: This study showed that only About 70–75% of lost work hours were compensated by the absentee or colleagues during normal working hours. Between 25–30% of the productivity costs as calculated by the classical method remained, if productivity costs were only calculated when extra efforts were needed. For 1 day absence only in 17–19% of the cases work absence resulted in productivity costs. The measurement of the compensating mechanisms seemed to be valid. Also, for different occupations different compensating mechanisms were reported in the expected direction. In our study populations, compensating mechanisms differed with occupational characteristics, like part-time work, managerial work and shift work. For example, higher educated workers more often compensate for lost work themselves. CONCLUSIONS: Including compensation reduces productivity costs due to absence from work to a considerable extent. Nevertheless, we advise researchers to take a broad range for correction, because for some compensation mechanisms the consequences for productivity costs may vary between settings.

FLEXIBILITY AND TRANSPARENCY OF BAYESIAN NETWORKS: MODELING THE ECONOMIC IMPACT OF DRUG-ELUTING CORONARY STENTS

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OBJECTIVE: Drug-eluting stents (DES) elute drugs that prevent coronary restenosis after a percutaneous revascularization. The cost of DES is quite high therefore imposing a relevant burden to hospital and NHS budgets. Patients selection and reimbursement policies need to be settled according to a large amount of clinical (number and anatomy of revascularized vessels, diabetes, unstable angina), economic (local cost of devices and procedures) and organizational variables (adoption rate of different types of DES and BMS, number of stent/procedure, shift from surgical to DES revascularization). The resulting decision models are usually blamed for high complexity but poor completeness and low transparency.

METHODS: Bayesian networks (BN) are close to decision nodes (influence diagrams). We explored the application of BN to policy selection for DES use, in both the NHS and the hospital perspective. Three commercial softwares were compared: Netica, TreeAgePro, HuginLite. Beta and gamma distributions were used to represent the probability of conditions/events and unit costs, respectively. Log-normal distributions were used to model relative risks.

RESULTS: BN modeling of the DES problem was feasible with the three softwares and required 35–40 nodes. We tested five types of restriction policies to DES use, anchored to: 1) the presence of diabetes; 2) the number of vessels to be revascularized; 3) the overall risk of restenosis; 4) a cutoff adoption rate of DES; and 5) a cutoff budget. We could verify that flexibility, directness and transparency varied among the softwares. Also software modalities to manage uncertainty and to report the results had different appeal. CONCLUSIONS: BN allows rapid and transparent estimations of the local/specific economic impact of several differ-