COST-EFFECTIVENESS OF LUMBAR DISC ARTHROPLASTY VERSUS LUMBAR FUSION FROM A HEALTH CARE SYSTEM’S PERSPECTIVE IN AUSTRIA

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OBJECTIVES: Chronic low back pain caused by disc degeneration (“degenerative disc disease”) is one of the most common causes for doctor visits in western industrial countries and presents an immense economic burden both to the individual and to society. In many cases, surgery can be a treatment option. For some indications, “lumbar disc arthroplasty” may be an innovative alternative to the current gold-standard, “lumbar fusion” and recent clinical studies have shown at least its non-inferiority for short- and midterm follow-up. The aim of this investigation was to analyse cost-effectiveness of “lumbar disc arthroplasty” versus “lumbar fusion” for a health care system’s perspective.

METHODS: A decision model including treatment paths and associated direct costs (surgery, inpatient stays, outpatient visits, GP and orthopaedic consultations, x-ray, medication, rehabilitation and physiotherapy) over a 12-months time horizon was developed. Main outcomes were clinical success (measured by Oswestry-Disability-Index (ODI) and SF-36 at 1 year follow-up) and costs in Euros (£). Clinical input data was derived from a recently performed matched-cohort-study and a meta-analysis of further four trials comparing the two treatment options. Costs were derived from standard Austrian price lists and from hospital’s cost unit accounting. RESULTS: Disc arthroplasty showed statistically significant better outcome-scores at 1 year follow-up, while at the same time caused lower costs than lumbar fusion: Costs per improved ODI-point were £918 in the fusion group and £519 in patients treated with lumbar disc arthroplasty. Costs for one gained SF36-point were £1,300 after fusion and £866 after disc arthroplasty. CONCLUSIONS: For a period of 1 year after surgery, this study suggests that lumbar disc arthroplasty is a cost-effective treatment compared with lumbar fusion from a health care system’s perspective in Austria. Further studies, including longer follow-up and indirect-costs, are necessary for the assessment of cost-effectiveness from the societal perspective.
identified 88 aspects as subunits of eight main domains. Agencies show most similarities in the domain ‘organisation’ (4 of 15 subunits), followed by ‘dissemination’ (2 of 9), ‘methods’ (2 of 20), ‘processes’ (1 of 11), and, scope (1 of 13). All subunits of the domains ‘decision’, ‘implementation’ and ‘impact’ were different. Ranking in terms of productivity is misleading without taking into account other aspects. CONCLUSIONS: We found considerably more differences than similarities across agencies and countries influenced by contextual aspects. This elementary framework is intended to provide disaggregated and global comparative insight that may allow further progress in clarification on the need for action regarding harmonization. By enlarging the number of agencies assessed, our findings could facilitate the communication between producers and users in an understandable, interpretable and transferable way.

**HT2 UPDATE OF RESULTS AND OUTCOMES OF NICE SINGLE TECHNOLOGY APPRAISALS—ECONOMIC CRITICISMS**

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**OBJECTIVES:** The Single Technology Appraisal (STA) system has attempted to shorten the process of assessment. As a follow-up to a previous ISPOR poster, we sought to update the framework to a previous ISPOR poster, we sought to update the database with since published STAs as well as conduct further qualitative research and investigate the criticisms on the economic aspects of the submissions. Discrepancies between ICERs obtained by the manufacturer and the ERG group, and their impact on outcomes were assessed. **METHODS:** A previously developed database was updated with data from submissions appraised between 6 December 2006 and 31 May 2008. Top-line clinical data was extracted from the manufacturer submission, evidence review group report, expert submission and the final appraisal determination. Further qualitative data was gathered to capture criticisms on the economic aspects of the submissions. Differences in ICER values between the manufacturer and the ERG group were also collected. **RESULTS:** In total, 18 STAs have been submitted to and appraised by NICE. Thirteen of the 18 submissions received positive guidance from NICE lems. The committee provided positive guidance in approximately 50% of cases, even though the ERG expressed concerns regarding aspects of the economic model. **CONCLUSIONS:** Results demonstrated discrepancies in ICERs between the manufacturer’s submission and the ERG report. Fifty percent of the submissions received positive guidance irrespective of concerns voiced by the ERG. Analyzing criticisms on economic aspects of submissions alongside the final outcome will assist in educating manufacturers in the expectations of NICE.

**HT3 A COMPARISON OF REASONS FOR RECOMMENDATION AND REJECTION IN FOUR HEALTH TECHNOLOGY APPRAISAL SYSTEMS: NICE, SMC, CADTH AND PBAC**

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**OBJECTIVES:** Technology appraisal systems are used in many countries to assess newly licensed drug treatments and devices. Our objective was to identify the reasons underlying recent drug appraisal decisions in four countries (England/Wales, Scotland, Canada and Australia) where decisions differed between the agencies. **METHODS:** Submissions appraised between 1 November 2005 and 31 May 2008 by NICE, SMC, CADTH and PBAC, in England/Wales, Scotland, Canada and Australia respectively, were searched for submissions with opposing decision outcomes. We compared qualitatively and quantitatively the reasons for rejection or recommendation for all drugs where decision outcomes differed between HTA bodies. **RESULTS:** A total of 81 submissions were identified as having been appraised by two or more of the HTA bodies with differing decision outcomes for the same indication. Seven were excluded from the analysis due to unavailability of data. The most common reasons given for recommendation of a drug were cost-effectiveness, superior efficacy to placebo, and superior efficacy to comparators in 28, 14 and 13 submissions respectively. The most common reasons given for rejection of a drug were a lack of cost-effectiveness, limitations identified in the economic model submitted by the manufacturer, and a lack of superior efficacy to its comparators, as given in 21, 20 and 10 submissions respectively. Twenty-five of the submissions highlighted the same issues pertaining to the new drug as another HTA with a different decision outcome, but continued to issue an alternative outcome. **CONCLUSIONS:** Commonly HTA bodies focus on the relative cost-effectiveness and efficacy of a new drug. However, different HTAs place different emphases on each aspect of a submission. Recognising the individual preferences of the appropriate body could potentially influence future outcomes.

**HT4 HEALTH TECHNOLOGY ASSESSMENTS: ARE THEY RELEVANT TO CLINICAL PRACTICE?**

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**OBJECTIVES:** Data from randomised clinical trials (RCT) are often considered best evidence for health technology assessments. The objective of this study was to compare event probabilities used in published cost-effectiveness studies to those observed in actual clinical practice. Selective Cox-2 inhibitors (coxibs) were used as an example. Almost all the 30 published coxib cost-effectiveness studies used RCT data for event probabilities. **METHODS:** A basic cost-effectiveness model was developed using a decision tree. Two alternative strategies were evaluated: prescription of a conventional NSAID or coxib. The UK General Practice Research Database (GPRD) was used to estimate the individual probabilities of upper gastrointestinal (GI) events during current use of NSAID or coxib. Outcomes included upper GI events as recorded in GPRD and hospitalisation for upper GI events recorded in the national registry of hospitalisations (Hospital Episode Statistics) linked to GPRD. Incremental prescriptions costs were based on GPRD costs. **RESULTS:** The study population included over 1 million patients prescribed conventional NSAIDs or coxibs. Only a minority of patients used the drugs long-term and daily (34.5% of conventional NSAIDs and 44.4% of coxibs), whereas coxib RCTs required daily use for at least 6–9 months. The rate of upper GI events (as recorded in GPRD) and hospitalisations during current use of conventional NSAIDs decreased over calendar time with 5–8% per year (tests for linear trend P-value < 0.05). The mean cost of preventing one upper GI event as recorded in GPRD was £52 k (ranging from £32 k with long-term daily use to £91 k with intermittent use) and £149 k for hospitalisations. The mean costs (for GPRD events) over calendar time were £29 k during 1990–1993 and