

multiple centres in UK, Italy, The Netherlands and Poland. For each country, published local costs have been applied to the resource use. Results have been stratified by glomerular filtration rate (GFR) at one-year post-transplant. **RESULTS:** Across these countries, the total three-year cost of post-transplant care varies depending on local treatment practices, from a minimum of €36,000 per patient in Poland to a maximum of €77,000 in the The Netherlands. Consistently across all countries, the average three-year costs decrease as a result of improved graft functioning status (increased GFR) at one year. The average three-year costs for a patient with a GFR \geq 45 at one year are 29% lower than those with <30GFR in the The Netherlands, 40% lower in Italy, 43% lower in Belgium, 50% lower in the UK, and 51% lower in Poland. **CONCLUSIONS:** This study demonstrates that in five European countries, worsening post-transplant renal function contributes to substantive increases in resource use, with some variation across regions. Therefore management strategies that promote renal function after transplantation are likely to provide important resource savings. Additional analyses are ongoing in Spain, Czech Republic, Hungary, Germany and Sweden to further confirm these observations.

PSU16

MINIMALLY INVASIVE SURGERY IN TOTAL HIP ARTHROPLASTY: A COST-EFFECTIVENESS ANALYSIS

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OBJECTIVES: The main objective of this study is to evaluate the cost-effectiveness of total hip arthroplasty through anterolateral minimally invasive surgery (MIS) and compare it with the traditional approach. **METHODS:** A study was conducted to compare traditional and minimally invasive surgical techniques for total hip arthroplasty in a population of 340 patients at two Spanish hospitals (the Virgen de las Nieves University Hospital of Granada and the Serrania de Ronda Hospital) during the year 2007. The design of the study was a prospective stochastic cost-effectiveness analysis, where effectiveness data were collected over a one-year period at individual patient levels and costs were gathered from the analytical accounting system of Virgen de las Nieves University Hospital. Effectiveness was measured in functional terms (clinical) and self-perceived quality of life (SF-12 survey) during the first 6 postoperative weeks. **RESULTS:** After 6 postoperative weeks, in comparison with the conventional technique, a pattern in improvements for MIS was observed for length of hospital stay (hospitalization time was 4.97 days shorter); for operative time (an average of 83.3 minutes for MIS patients and 97.8 minutes for the control group); and for average length of skin incision (9.83 cm. for the MIS group and 16.2 cm. for the control group). The total cost of THA with MIS was lower (4519.19 €) than the cost of traditional hip replacement (6722.46 €). Incremental effectiveness value in terms of quality of life was 0.11 points in the SF-12 survey for MIS. The cost-effectiveness analysis reveals a strong dominance of MIS versus traditional THA. **CONCLUSIONS:** The study showed that the minimally invasive technique reduces inpatient resource utilization and improves self perceived quality of life of patients compared with the traditional approach. The more beneficial incremental effectiveness ratio of MIS versus traditional THA supports the recommendation for expanded use of minimally invasive surgery.

PSU17

COST-EFFECTIVENESS OF DSAEK VERSUS PK FOR CORNEAL ENDOTHELIAL DISEASE

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OBJECTIVES: To perform a comparative cost-effectiveness analysis of Descemet's stripping automated endothelial keratoplasty (DSAEK) and penetrating keratoplasty (PK) for corneal endothelial disease. **METHODS:** Systematic review of the peer-reviewed English literature through a search of PubMed to populate a 5 year model of a) quality adjusted life years (QALYs) associated with clinical outcomes of the relatively new DSAEK procedure and the long-established PK procedure, and b) third party payer (US Medicare 2010) costs associated with associated medical, surgical and pharmaceutical services. **RESULTS:** Five year follow-up focusing on standard therapy and complications yields 2.99 QALYs associated with DSEAK and 1.94 QALYs with PK, a difference of 1.05. Following slightly higher surgical costs of \$US7925 for DSEAK and \$US7544 for PK, total five year costs are \$US10,104 associated with DSEAK and \$US9840 with PK, a difference of \$US264. The ICUR is \$US251. Sensitivity analyses of differing disc dislocation rates, astigmatism complication rates and cost parameters yield ICURs in the range of \$US0 to \$US500. **CONCLUSIONS:** Using the literature on outcomes and costs for treatments of corneal endothelial disease, a five year model yields robust results suggesting that DSEAK is slightly more expensive procedure than PK to third party payers, but with favorable quality adjusted life year resulting making DSEAK a cost-effective option under all scenarios considered.

PSU18

COST-UTILITY ANALYSIS OF LAPAROSCOPIC VERSUS OPEN SURGERY FOR COLORECTAL CANCER

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OBJECTIVES: To assess the comparative efficiency of laparoscopic versus open surgery in colorectal cancer patients. **METHODS:** To establish relative efficacy of laparoscopic versus open surgery in all measures that could have clinical or economic relevance. Using previous systematic reviews and updating their contents with the new information published after. Meta-analysis technique is used to summarize the information. A Markov model is developed to estimate progress in time

of health and resource use obtained with these two alternatives. Measures of health outcomes used in the model were life years and quality adjusted life years. Probabilistic sensitivity analysis was performed to assess uncertainty in the parameters included in the Markov model. **RESULTS:** Preliminary results show that cost of laparoscopic-assisted surgery is higher than open surgery in close to 750 €. This difference decreased slightly in the immediate postoperative period due to the lower readmission rate. The difference in costs, coupled with the equivalence in long-term results obtained by the two techniques makes that any of them can be considered efficient for our health system. Since considering a willingness to pay between 20,000 and 30,000 € per quality-adjusted life year gained, none of the alternatives have above 60% chance to be the best option. **CONCLUSIONS:** The laparoscopic-assisted resection has shown results in terms of overall survival and recurrence similar to those achieved by open surgery in colorectal surgery patients. The estimated cost for laparoscopic intervention is slightly higher than open surgery, but seems to accelerate the postoperative recovery time. This implies that none of the two alternatives is clearly superior to the other in terms of efficiency. Therefore, each decision maker at hospital level will assess available human and material resources, and its cost structure to use resources more efficiently.

PSU19

THE DOORS-STUDY OF ON-PUMP VERSUS OFF-PUMP CORONARY ARTERY BYPASS GRAFTING: A POST HOC ANALYSIS OF METHODS FOR MULTIPLE IMPUTATION OF MISSING DATA IN ECONOMIC EVALUATION

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OBJECTIVES: A cost-utility analysis was conducted alongside the Danish On-pump Off-pump Randomization Study (DOORS) based on the intention to treat principle. **METHODS:** A post hoc analysis of the problem of missing data was addressed by multiple imputation using the conditional Gaussian as well as the chained equation approach. Both methods were applied using two different models (representing a data-driven respectively a clinical reasoning selection strategy). **RESULTS:** The cost-effectiveness acceptability curve for the complete case analysis (n=779) showed 88 % probability of OPCAB being cost-effective at a threshold value of £30,000 per QALY. In analyses based on the conditional Gaussians approach and the chained equations approach to multiple imputation the results was 73-75 %. **CONCLUSIONS:** The result of the previously published complete-case analysis of the cost-effectiveness of OPCAB versus CCABG was reinforced by this post hoc analysis of the uncertainty due to missing data. The analysis showed that the conditional Gaussian approach and the chained equations approach produced similar results Evidence about the long term cost-effectiveness of OPCAB versus CCABG is warranted.

Surgery - Patient-Reported Outcomes & Preference-Based Studies

PSU20

ESTIMATING PREFERENCES FOR ECONOMIC EVALUATION IN PATIENTS WITH LOCALIZED PROSTATE CANCER

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OBJECTIVES: The high variability on preferences estimates for prostate cancer could be explained by differences in methods, techniques and obtaining populations. Our aim was to estimate the preferences and willingness to pay of patients in the "Spanish Multicenter Study of Localized Prostate Cancer" at 5 years of follow-up, according to the treatment received (radical prostatectomy, external radiotherapy and brachytherapy). **METHODS:** Data analyzed were from the 5-year follow-up evaluation of the "Spanish Multicenter Study of Localized Prostate Cancer", in which patients completed the preference questionnaire. The estimation of preferences was conducted using the indirect method (from the SF-6D index), and the direct method using the Standard Gamble (SG) and Time Trade-Off (TTO) techniques. We also assessed the patients' Willingness-to Pay (WTP). The three treatment groups were compared using the Kruskal Wallis test. **RESULTS:** Of the 441 patients enrolled, 105 were treated with radical prostatectomy, 137 with external radiotherapy and 199 with prostate brachytherapy. Most patients were married or living with a partner (89.6%), were retired (76%) and had completed primary or secondary studies (53.5%). Utilities measured with the SF-6D showed no statistically significant differences by treatment group (p = 0.356). The utilities measured by TTO presented the greatest differences according to treatment: mean of 0.94 in the radical prostatectomy group, 0.99 in external radiotherapy and 0.98 in brachytherapy (p < 0.001). The willingness to pay also showed significant differences: mean of 58.4 € in the radical prostatectomy group, 32.04 € in external radiotherapy and 28.8 € in brachytherapy (p < 0.01). **CONCLUSIONS:** The estimates of preferences vary according to the method and the technique used to obtain them. Both the utilities obtained by the direct method and the ones through willingness to pay indicate that radical prostatectomy is the worst valued treatment, prostate brachytherapy being the most valued by patients with localized prostate cancer.

PSU21

SPEECH PROBLEM AND HEALTH-RELATED QUALITY OF LIFE IN HEAD AND NECK CANCER SURVIVORS AFTER FIVE YEARS OF TREATMENTS

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OBJECTIVES: Advanced head and neck cancer (HNC) survivors may have permanent alteration in their ability to communicate with others. Health-related quality of life (HrQOL) outcomes have been emphasized as an important issue in cancer survivors. This study compared HrQOL of the HNC survivors (five years after primary treatments) who had speech problem (SP) to who did not (NSP). We also explored sensitivity of HrQOL instruments relative to this problem. **METHODS:** This study was observational, mailed survey study. Target samples were individuals who received HNC treatments before 2005. We identified subjects through the Central Arkansas Radiation Therapy Institute Registry or recruited by physicians of the university Head and Neck Surgery Unit. Self-perceived speech problem and HNC-specific HrQOL outcomes were determined using the University of Washington Quality of Life Questionnaire (UW-QOL) version 4. HrQOL outcomes were also described using the EQ-5D and the SF-6D. A rank analysis of covariance was performed to test for differences between the two groups on HrQOL outcomes, adjusted for years after treatment, treatment received, and cancer site. We expected that a sensitive HrQOL instrument would produce significant lower HrQOL scores for the SP group when compared to the NSP group at p -value < 0.05 . **RESULTS:** Forty-seven HNC survivors' HrQOL were analyzed (78% response rate). Survivors' age averaged 65 years (SD=13) and the average years after the primary treatment was 8 years (SD=2). 16 (34%) reported having speech problems (SP group). The UW-QOL-Composite and the SF-6D scores in the SP group were significant lower than the NSP group (62 ± 16 vs. 78 ± 15 , $p=0.007$; 0.66 ± 0.12 vs. 0.78 ± 0.16 , $p=0.023$). While there was no difference on the EQ-5D scores between the two groups (0.78 ± 0.16 (SP) versus 0.84 ± 0.14 (NSP), $p=0.252$). **CONCLUSIONS:** HNC survivors with self-perceived speech problem reported significant lower HrQOL. The UW-QOL and the SF-6D are sensitive to detect HrQOL difference relative to speech problem.

PSU22

PERFORMANCE OF THE FUNCTIONAL ASSESSMENT OF VISUAL TASKS (VISTAS-18) AMONG CATARACT PATIENTS RECEIVING MONOFOCAL AND MULTIFOCAL INTRAOCULAR LENS IMPLANTS

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OBJECTIVES: This study was performed to examine the psychometric performance of the four VISTAS-18 scales (i.e., Near Function, Intermediate Function, Extended-Intermediate Function, Distant Function) to the known benefits of intraocular lens (IOL) surgery, and more subtle differences between monofocal and multifocal IOL types. **METHODS:** Subjects (Ss) were recruited from surgery clinics 2-8 weeks prior to receiving bilateral IOL implants. Visual assessments were conducted at the pre-surgical visit and then after recovery. Following both visits, Ss completed a self-report questionnaire and the VISTAS item pool. The four VISTAS-18 Function Scale scores were evaluated using change from baseline in visual acuity assessments, and as well the type of IOL implant. Responder analyses were conducted for each distance range. **RESULTS:** Ss ($n=61$) had a mean age of 69.0 years (SD= 9.5) were in good health prior to surgery, although with low satisfaction with their vision and very low satisfaction with their visual aids. Most Ss received monofocal ($n=39$) or multifocal ($n=16$) lenses. Uncorrected and corrected visual function improved significantly following surgery on all four VISTAS-18 scales. Greater improvements were observed on the Near ($p=0.007$) and Intermediate ($p=0.017$) Function Scales for recipients of multifocal versus monofocal lens. The responder analyses indicated that 10/15 (66%) individuals who received multifocal lenses reported a one or more point reduction in near range task difficulty, and 11/15 (73%) in the intermediate range, compared to only 10/35 (29%) and 16/30 (53%) of individuals receiving monofocal implants. **CONCLUSIONS:** The VISTAS-18 Function Scales performed well, both in terms of changes in visual acuity associated with IOL implantation, as well as in demonstration of responsiveness to more subtle differences in Near and Intermediate function associated with lens type. The clinical implications of reliable assessment of visual tasks in near, intermediate and distant ranges of vision are discussed.

PSU23

REHABILITATION NEEDS AND PREDICTIVE FACTORS OF HEALTH-RELATED QUALITY-OF-LIFE IN BREAST CANCER PATIENTS DURING TWO YEARS AFTER SURGERY - A MULTICENTER PROSPECTIVE STUDY

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OBJECTIVES: Provision of psychosocial support and rehabilitation for patients after cancer treatment is important for long-term health-related quality-of-life (HRQOL). Effective use of healthcare resources requires identification of patients requiring rehabilitation. The objectives of this study were to clarify the patterns of physical and psychosocial recovery over time and to identify the significant baseline and treatment-related factors predicting HRQOL at 6 months, 1 and 2 years after breast cancer surgery. **METHODS:** A multicenter longitudinal study was performed to evaluate physical conditions, anxiety, depression and HRQOL at one month, 6 months, and 1 and 2 years after surgery in 196 breast cancer patients. Physical conditions were evaluated using a patient-reported symptom checklist. HRQOL was rated using the Functional Assessment of Cancer Therapy scale-General (FACT-G) and the Breast Cancer subscale. Anxiety and depression were rated using

the Hospital Anxiety and Depression Scale (HADS). **RESULTS:** More than 50% of patients had local problems of "tightness", "arm weakness" and "arm lymphedema", and systemic problems of "reduced energy, fatigue, and general weakness" postoperatively. The HRQOL score significantly improved one year after surgery, and scores for physical, emotional and functional well-being also increased with time, whereas the score for social well-being was highest at baseline and decreased with time. Depression and anxiety significantly improved with time. Concomitant disease, marital status and the presence of a partner, anxiety and depression at baseline, pathological lymph node involvement, and adjuvant intravenous chemotherapy were significant factors predicting FACT-G scores at 6 months and 1 and 2 years after surgery. Depression at baseline was a strong predictor of HRQOL up to 2 years after surgery. **CONCLUSIONS:** These results suggest that physical rehabilitation is required for tightness and lymphedema, and a further study of psychosocial interventions is required to improve depression and social well-being.

PSU24

COMPARISON OF THE RESPONSIVENESS OF THE SF-36 AND THE RAW AND RASCH-BASED SCORES OF THE OXFORD KNEE SCORE IN PATIENTS UNDERGOING TOTAL KNEE REPLACEMENT

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OBJECTIVES: To compare the responsiveness of the generic Short Form 36 (SF-36) and the raw and Rasch-based scores of the condition-specific Oxford Knee Score (OKS) in patients undergoing total knee replacement (TKR). **METHODS:** Adult patients undergoing TKR in a hospital in Singapore between 2001 and 2006 completed the SF-36 and OKS at baseline and at 6 and 24 months postoperatively. OKS data were fitted to the Rasch partial credit model using the Winsteps program. Responsiveness was assessed using effect size (ES), standardised response mean (SRM), and relative validity (RV). **RESULTS:** A total of 702 patients who had complete data at baseline and two follow-ups were included in the analysis. After removing items regarding limping and kneeling, the remaining OKS items fit the Rasch model. Bodily pain (BP) and Physical functioning (PF) were more responsive than the other SF-36 domains. In addition, the OKS raw scores (raw-OKS) and Rasch-based modified OKS (Rasch-OKS) were consistently more responsive than all eight SF-36 domains. At the 6-month follow-up, Rasch-OKS had the largest ES whereas raw-OKS had the largest SRM (2.7 and 1.9, respectively). When compared to raw-OKS, the RV of Rasch-OKS, BP, and PF were 1.5, 2.0, 2.8, respectively. Similar order was observed at the 24-month follow-up. **CONCLUSIONS:** The OKS is more responsive than the SF-36 in patients undergoing total knee replacement. The raw and Rasch-based scores of OKS have comparable responsiveness. Different responsiveness indices may give different results.

Surgery - Health Care Use & Policy Studies

PSU25

EFFECTIVENESS OF MINIMALLY INVASIVE SURGERY FOR TOTAL HIP ARTHROPLASTY

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OBJECTIVES: The main objective of this review is to determine the effectiveness of total hip arthroplasty with MIS compare to the traditional approach. Specifically, this appraisal aims to answer questions related to functionality, quality of life, and clinical results. **METHODS:** The bibliographic review was conducted in two phases: an initial phase of search for appropriate studies and a second phase of selection according to previously established criteria. The search for articles was carried out in major databases and subsequently in bibliographical references for the studies found. The databases reviewed were MEDLINE/PubMed/MeSH Database, EMBASE, Economic Evaluation Database/DARE/HTA, CSIC/EMI-Biomedicine, and ScienceDirect Collection. The search period was limited to the years 2003 to 2009. The selection of items was made at an early stage by screening article summaries followed by full texts. **RESULTS:** We initially selected more than 600 studies, 78 for detailed evaluation, and 32 final studies for inclusion in the review. The results of this review are presented in two sections. The first represents the main descriptive characteristics of the studies selected in favor of MIS (19), and the second presents the unfavorable studies (13). Among the main benefits we found a decrease of transfusion requirements, better mobilization and rehabilitation, low dislocation, reduced surgical time, shorter hospital stays, less soft tissue damage, and better short term results. The main drawbacks were increased risks of complications, malposition of prosthesis, healing problems, and irrelevant clinical incision size and functionality. **CONCLUSIONS:** The studies presented in this review show clear evidence of how MIS influences the effectiveness related to functional outcomes, hospital stays, and surgical aggressiveness of the intervention. In this regard, we found a greater number of comparable studies supporting minimally invasive surgery in terms of effectiveness than those that emphasize complications and disadvantages of this technique.

PSU26

TWO-YEAR CHANGES IN GENERIC AND OBESITY-SPECIFIC QUALITY OF LIFE AFTER GASTRIC BYPASS

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