

and is dominant over standard care without ONS: it leads to cost savings and a higher effectiveness.

PHPI08 THE HEALTH ECONOMIC IMPACT OF ORAL NUTRITIONAL SUPPLEMENTS IN RESIDENTIAL CARE IN GERMANY

Nuijten M¹, Freyer K²

¹Ars Accessus Medica/Erasmus University Rotterdam, Jisp, The Netherlands, ²Nutricia Advanced Medical Nutrition, Zoetermeer, The Netherlands

OBJECTIVES: To assess the health economic impact of oral nutritional supplements (ONS), being a medical nutrition product, in residential care from the society perspective in Germany in 2009. **METHODS:** This health economic analysis is based on a comparison of the use of ONS versus "no ONS" in residential care patients who are eligible for ONS due to disease-related malnutrition (DRM). The costs of the two treatment strategies ONS versus "no ONS" were assessed using a linear decision analytic model reflecting costs related with DRM. The model structure allowed for differences in costs for ONS and cost of care. Clinical probabilities and resource utilization were based on clinical trials and published literature; cost data were from official price tariffs. **RESULTS:** The use of ONS reduces the total costs from € 16,617 to € 15,453, which corresponds with a €1,164 cost savings per residential care patient. The additional costs of ONS are more than balanced by a reduction on cost of care. Sensitivity analyses were performed on all parameters, including cost of care and improvement of DRM. These results showed that the use of ONS in all sensitivity analyses leads to cost savings. **CONCLUSIONS:** This health economic analysis shows that the use of ONS in residential care patients is a cost-effective treatment in Germany and is dominant over standard care without ONS: it leads to cost savings and a higher effectiveness.

PHPI09 THE ECONOMIC IMPACT OF ORAL NUTRITIONAL SUPPLEMENTS IN AMBULATORY SETTING IN GERMANY

Nuijten M¹, Freyer K²

¹Ars Accessus Medica/Erasmus University Rotterdam, Jisp, The Netherlands, ²Nutricia Advanced Medical Nutrition, Zoetermeer, The Netherlands

OBJECTIVES: To assess the economic impact of oral nutritional supplements (ONS), being a medical nutrition product, in elderly patients in the ambulatory setting from the society perspective in Germany in 2009. **METHODS:** This health economic analysis is based on a comparison of the use of ONS versus "no ONS" in elderly (>65 years) patients in the ambulatory setting who are eligible for ONS due to disease-related malnutrition (DRM). The costs of the two treatment strategies ONS versus "no ONS" were assessed using a linear decision analytic model reflecting costs related with DRM. The model structure allowed for differences in costs for ONS, consultations and hospitalization costs. Clinical probabilities and resource utilization were based on clinical trials and published literature; cost data were from official price tariffs. **RESULTS:** The use of ONS reduces the total costs from €1376 to €1197, which corresponds with a €179 cost savings per patient. The additional costs of ONS are more than balanced by a reduction of consultations and hospitalization. Sensitivity analyses were performed on all parameters, including cost of hospitalization and improvement of DRM. These results showed that the use of ONS in all sensitivity analyses leads to cost savings. The use of ONS would lead to an annual cost saving of €344 million based on the number of 1.9 million malnourished elderly in Germany. **CONCLUSIONS:** This health economic analysis shows that the use of ONS in eligible elderly patients in the ambulatory setting leads to a positive economic impact in Germany.

PHPI10 ASSESSING THE OUTCOME OF ELBOW SURGERY: DEVELOPMENT, VALIDATION AND RESPONSIVENESS OF THE PATIENT-REPORTED OXFORD ELBOW SCORE (OES)

Dawson J¹, Fitzpatrick R¹, Doll H¹, Carr AJ², Churchman D³

¹University of Oxford, Health Services Research Unit, Oxford, Oxfordshire, UK, ²University of Oxford, Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, Oxford, Oxfordshire, UK, ³Isis Innovation Ltd, Oxford, UK

OBJECTIVES: To develop and validate a patient-reported outcome measure for elbow surgery. **METHODS:** A questionnaire was created following semi-structured interviews with 18 patients being treated for elbow problems to determine candidate questions. These 18 questions were then prospectively tested, pre- and again at 6 months post-surgery, on 104 patients undergoing a variety of surgical treatments for elbow problems. Assessment of test-retest reliability involved repeated OES completion, at home, 2 days later. Candidate questions were excluded if they showed high ceiling or floor effects, or if they cross-loaded to more than one domain. Underlying factor structure, dimensionality, internal and test retest reliability, construct validity and responsiveness of the questionnaire items were assessed in relation to the: 1) Mayo Elbow Performance Score (MEPS) clinical scale; 2) Disabilities of the Arm, Shoulder and Hand (DASH) questionnaire; and 3) SF-36 general health survey. **RESULTS:** A total of 75% of patients were followed-up. Six candidate questions were excluded due to ceiling effect, cross loading or disordered response in Rasch analysis. A final 12-item questionnaire resulted, consisting of 3 unidimensional domains/scales: 'Elbow Function', 'Pain', 'Social-Psychological'. Internal reliability (Cronbach's alpha) for the 3 OES domains were optimal: Pain 0.89, Elbow function 0.90, Social-psychological 0.84. Test-retest reliability, (intra-class correlation coefficient), was good for all three domains (0.98; 0.90; 0.87). The OES showed high convergent correlation with the

DASH and MEPS, with the exception of the social-psychological with the MEPS, which showed moderate correlation; correlation with related domains of the SF-36 was high. Divergent validity was confirmed by moderately low correlation with the general and mental health domains of the SF-36. Responsiveness was good, with effect sizes of >1.0 for the OES pain and social-psychological domains and for the MEPS; 0.80 for OES function and -0.74 for the DASH. **CONCLUSIONS:** The 12-question OES has good measurement properties in the context of elbow surgery.

PHPI11 IMPACT OF BLEEDING-RELATED COMPLICATIONS AND BLOOD PRODUCT TRANSFUSIONS ON HOSPITAL LENGTH OF STAY AND COSTS IN INPATIENT SURGICAL PATIENTS

Stokes M¹, Ye X², Mercaldi K³, Reynolds MW³, Rupnow MF², Hammond J²

¹United BioSource, montreal, QC, Canada, ²Ethicon, Inc., Somerville, NJ, USA, ³United BioSource Corporation, Bethesda, MD, USA

OBJECTIVES: The purpose of this study was to examine the incidence of bleeding-related complications and blood product transfusions and their impact on hospital length of stay (LOS) and total cost in various inpatient surgical cohorts. **METHODS:** A retrospective analysis was conducted using Premier's Perspective hospital database. Patients who had an inpatient procedure within a specialty of interest (cardiac, vascular, non-cardiac thoracic, solid organ, general, reproductive organ or knee/hip replacement) during 2006–2007 were identified based on ICD-9-CM procedure codes. For each specialty, the rate of bleeding-related complications (including bleeding event, interventions to control for bleeding and blood product transfusions) were examined, and hospital costs and length of stay (LOS) were compared between surgeries with versus without bleeding-related complications. Incremental costs were estimated using a multivariate analysis adjusting for demographics, hospital characteristics and other baseline characteristics. **RESULTS:** A total of 103,922 cardiac, 216,380 vascular, 142,698 non-cardiac thoracic, 45,824 solid organ, 362,797 general, 12,271 reproductive organ and 247,287 knee/hip replacement surgeries were identified. Overall, the rate of bleeding-related complications was 42.2% and ranged from 27.5% to 47.5% for general and cardiac surgeries, respectively. Incremental LOS associated with bleeding-related complications or transfusions across all specialties averaged 5.5 days and ranged from 1.3 to 9.6 days for knee/hip replacement and non-cardiac thoracic surgeries, respectively. The incremental cost per hospitalization associated with bleeding-related complications was highest for vascular (\$15,296) followed by solid organ (\$14,072), non-cardiac thoracic (\$13,715), cardiac (\$10,279), general (\$4,364), reproductive organ (\$8,200) and knee/hip replacement (\$3,025). **CONCLUSIONS:** This study demonstrates the high incidence of and increased economic burden associated with bleeding-related complications and transfusions among inpatient surgical patients. Given the high burden, implementation and economic impact assessment of blood conservation strategies should be further evaluated.

PHPI12 TRANSPLANT IMMUNOSUPPRESSIVE DRUG EXPENDITURE BY U.S. MEDICAID PROGRAMS AND UTILIZATION AMONG BENEFICIARIES: A TREND ANALYSIS FROM 1991 TO 2007

Zhang YJ, Guo JJ, Kelton CM, Cavanaugh T

University of Cincinnati, Cincinnati, OH, USA

OBJECTIVES: Transplantation requires the use of immunosuppressive agents (ISAs) to prevent acute rejection and chronic allograft dysfunction. The purposes of this study were to analyze ISA utilization and expenditure trends in the U.S. Medicaid market. **METHODS:** Study ISAs included azathioprine (AZA), mycophenolate mofetil (MMF), cyclosporine (CsA), sirolimus (SIR), tacrolimus (TAC), antithymocyte globulin, and monoclonal antibodies. The data source was the national summary file of Medicaid outpatient drug utilization data for the years 1991 to 2007. A retrospective, descriptive trend analysis was conducted to assess the yearly trends in number of prescriptions, reimbursement, reimbursement per prescription, and prescription and reimbursement market shares. **RESULTS:** The oral ISA prescriptions and reimbursements increased, respectively, from 162,000 and \$34 million in 1991 to 719,550 and \$251 million in 2005. Meanwhile, the prescriptions and reimbursements of ISA induction antibodies increased from 12 and \$9,356 in 1991 to 435 and \$548,652 in 2005. Utilization and reimbursement fell in 2006 and 2007. Among oral ISAs, the prescription market share of CsA was 65% in 1991, increased to 97% in 1994, and gradually decreased to 15% in 2007, while the market share of AZA fell from 35% in 1991 to 1% in 1994, and ranged from 13%–30% over the period 1996–2007. Utilization of both TAC and MMF has increased since their introduction; these drugs have dominated the market since 2004. The average per-prescription reimbursement for AZA and CsA has decreased since 1998, while that for MMF, SIR and TAC has increased. **CONCLUSIONS:** A significant increase in Medicaid expenditure on ISAs may be due to the increased number of transplant recipients and increased ISA prices over time. TAC and MMF dominated the oral ISA market because of their strong efficacy and safety profiles. A significant drop in utilization during 2006–2007 was related to the introduction of Medicare Part D.