assumed equal for everolimus, while utilities for the post progression stages were obtained from the literature. Resource use was determined by a panel of five experienced experts to reflect Portuguese clinical practice. Official unit costs were used, following the Portuguese National Health Service perspective. The model adopted a lifetime frame (15 years) with a 5%discount rate. **RESULTS:** Axitinib allowed an increment of 0.20 years of progression free survival, 0.53 years of overall survival, and 0.32 quality adjusted life years compared to everolimus. Despite having a similar daily cost, the use of axitinib implied an incremental cost of 9,100€, mainly due to the increase in progression free survival, that matches second line treatment duration. Consequently the cost per quality adjusted life year was 28,598€. Sensitivity analyses showed that results were robust to model parameters specification, with the main uncertainty source being clinical efficacy. **CONCLUSIONS:** Axitinib increased progression free and overall survival, which allowed patients to benefit from more quality adjusted life years at a cost increase. Overall, it was possible to advocate that axitinib is cost-effective, as the cost per QALY is below commonly accepted thresholds.

PCN147

ECONOMIC EVALUATION OF PACLITAXEL ALBUMIN, PACLITAXEL, AND DOCETAXEL AS A SECOND LINE TREATMENT FOR METASTATIC BREAST CANCER

Gharaibeh M, Malone DC
University of Arizona, Tucson, AZ, USA

OBJECTIVES: Clinical studies have shown that docetaxel to be superior to paclitaxel in overall survival (OS) and progression free survival (PFS) (median OS: 1.28 vs 1.06 year; median PFS: 0.47 vs 0.30 year) for the treatment of patients with metastatic breast cancer progressing after an anthracycline-based regimen. Other studies have shown paclitaxel-albumin extended OS by 9.7 weeks, and TTP by 4 weeks. An economic evaluation based on these two clinical trials was performed to compare paclitaxel albumin, paclitaxel, and docetaxel as a second line treatment for metastatic breast cancer. **METHODS:** A Markov model was conducted using three health states: PFS, progressed, and death to estimate overall survival, cost, life year gain (LYG) and quality adjusted life year (QALY). Efficacy data for the treatments were obtained from the published literature. In the absence of head-to-head trials, comparative efficacy and safety of taxanes were estimated using indirect comparisons. A 3% discount rate for cost and outcomes was used. Cost of chemotherapy, administering, monitoring the disease, loss of productivity, and adverse drug reactions for patients on treatment were included from the US societal perspective. **RESULTS:** Compared to docetaxel, paclitaxel albumin was found to be less expensive ($36,241 vs $73,510) and more effective in term of QALYs (0.782 vs 0.710). The incremental cost effectiveness ratio (ICER) for paclitaxel albumin compared to paclitaxel was $77,670/QALY. The probabilistic sensitivity analysis showed that paclitaxel albumin has 70% probability of being cost effective at $100,000/QALY threshold value. **CONCLUSIONS:** Paclitaxel-albumin is an attractive treatment option for the treatment of metastatic breast cancer in patients who have failed 1st-line treatment for metastatic disease. The primary analysis comparing paclitaxel albumin to docetaxel demonstrated that paclitaxel albumin dominated docetaxel because it was less costly and more effective.

PCN148

COST EFFECTIVENESS ANALYSIS OF TARGETED INTRAOPERATIVE RADIOTHERAPY ALONE (TARGIT-A) IN EARLY BREAST CANCER PATIENTS

Vaidya A[1], Vaidya P[2], Both B[3], Brew-Graves C[4], Vaidya J[4]
[1]*Maastricht University, Maastricht, The Netherlands,* [2]*O-Zone HEOR Consultancy, Maastricht, The Netherlands,* [3]*Carl-Zeiss Meditec AG, Oberkochen, Germany,* [4]*University College London, London, UK*

OBJECTIVES: Whole-breast external beam radiotherapy (EBRT) is normally given over 3-6 weeks after lumpectomy in early breast cancer patients to reduce recurrence and mortality. An individualised risk-adapted approach to adjuvant radiotherapy has been tested in the randomised TARGIT-A trial which tested the efficacy of one dose of radiation to tumour bed during lumpectomy. The objective of the present study was to assess the cost effectiveness of TARGIT-A in these patients. **METHODS:** A model based economic evaluation compared single dose TARGIT-A with current practice of EBRT in UK. A state transition Markov model approach was used to simulate the treatment outcomes in a time horizon of 20 years post-surgery. The primary outcome of interest was quality adjusted life years gained (QALY) and analysis was conducted from the health care payer's perspective. To address decision uncertainty, probabilistic sensitivity analysis was performed. A discount rate of 3.5% was applied to future costs and effects. **RESULTS:** In the Base Case Analysis TARGIT-A was a dominant strategy yielding higher QALYs at a lower cost than EBRT. Discounted EBRT and IORT costs for the time horizon of 20 years were £ 20,926 and £ 14,461 respectively. Discounted incremental QALY gained by use of IORT was 0.0069. Model results were robust to parameter uncertainty and probabilistic results were similar to the deterministic results. Application of the net monetary benefit (NMB) framework revealed higher NMB for TARGIT-A in all Monte Carlo simulations. Cost effectiveness acceptability curves show that TARGIT-A is cost effective at various willingness to pay thresholds. **CONCLUSIONS:** TARGIT-A is a cost effective strategy to treat early breast cancer patients in the UK. Implementation of this one-off radiation treatment within a risk-adapted approach could improve quality of life by sparing them from the protracted course of EBRT, improve compliance, prevent unnecessary mastectomies and save valuable NHS resources.

PCN149

EARLY COST-EFFECTIVENESS MODELING FOR TUMOR INFILTRATING LYMPHOCYTES (TIL) -TREATMENT VERSUS IPILIMUMAB IN METASTATIC MELANOMA PATIENTS

Retèl VP[1], Steuten LMG[2], Mewes JC[2], van Harten WH[2]
[1]*Netherlands Cancer Institute, Amsterdam, The Netherlands,,* [2]*University of Twente, Enschede, The Netherlands*

OBJECTIVES: Metastatic melanoma has a poor prognosis with 10 year survival being <5%. Standard therapy is the effective but costly Ipilimumab. An emerging 1st line treatment is Tumor Infiltrating Lymphocytes (TIL), with response rates >50% and expected survival rates of 25%-42% versus 45% (1yr) and 23,5% (2yr) for Ipilimumab. TIL is highly personalized, however complex and requests substantial upfront investments from the hospital in expensive lab-equipment, staff expertise and training, as well as extremely tight hospital logistics. Therefore, an early health economic modelling study, supporting a Coverage with Evidence Development (CED) program, was performed. **METHODS:** We used a Markov decision model to estimate the expected costs and outcomes (quality adjusted life years; QALYs) for TIL versus Ipilimumab in metastatic melanoma patients from a societal perspective over a life long time horizon. Three mutually exclusive health states (stable disease, progressive disease and death) were modelled, divided in first and second line treatment. Technical failures and non-compliance were incorporated to reflect the dynamic nature of the technology. To inform further research prioritization, Value of Information (VOI) analysis was performed. **RESULTS:** TIL is expected to yield more QALYs compared to Ipilimumab (0.99 vs 0.52 respectively) at lower total costs (€83,588 vs €87,834 respectively). Based on current information TIL has a probability of 88% for being cost effective at a cost/QALY threshold of €30,000. Expected Value of Perfect Information (EVPI) amounted to €1,2 million. Partial EVPI (EVPPI) was highest for survival data (€550,000). Expected Value of Sample information was estimated €355,000 for an optimal sample size of n=50. **CONCLUSIONS:** TIL is expected to improve QALYs compared to Ipilimumab at lower incremental cost and has the highest probability of being cost-effective. To reduce decision uncertainty, a future clinical trial to investigate survival seems most valuable, and should preferably be undertaken as part of a CED program.

PCN150

A COST EFFECTIVNESS ANALYSIS OF EVEROLIMUS COMPARED WITH AXITINIB IN THE TREATMENT OF METASTATIC RENAL CELL CARCINOMA IN THE UNITED KINGDOM

Chandiwana D[1], Perrin A[2], Sherman S[2]
[1]*Novartis Pharmaceuticals UK Limited, Camberley, UK,* [2]*Analytica LA-SER International, Inc, New York, NY 10018, NY, USA*

OBJECTIVES: This study assessed the cost-effectiveness of everolimus versus axitinib for the treatment of advanced metastatic renal cell carcinoma (mRCC) in the United Kingdom (UK). **METHODS:** A Markov model was developed with three health states: stable disease, disease progression and death. The model time horizon was 12 years and a UK NHS perspective was considered. There are no head to head studies comparing everolimus with axitinib, thus evidence from a weighted adjusted indirect analysis based on the RECORD-1 and AXIS trials was used to compare progression-free survival (PFS) for everolimus versus axitinib. Survival distributions for PFS were fitted to the post-matched population and fit statistics were generated. As overall survival (OS) data were not available from the AXIS trial at the time of the indirect analysis, the model assumed that the OS for axitinib was equivalent to that of everolimus, based on OS from the RECORD-1 trial. The Weibull survival distribution was used for both PFS and OS. Quality of life data were derived from the Swinburn et al. study and drug costs were obtained from the British National Formulary. **RESULTS:** Everolimus resulted in a progression-free life expectancy of 0.60 years compared to 0.57 with axitinib. Everolimus resulted in 0.65 QALYs compared to 0.63 QALYs for axitinib. Active drug costs were £8,105 for everolimus and £25,723 for axitinib. Total costs were higher for axitinib (£42,533) compared to everolimus (£24,387). The cost difference reflects the higher treatment costs per month and longer treatment duration for axitinib compared to everolimus. Therefore, the incremental cost of axitinib compared with axitinib was -£18,146, highlighting that everolimus is less expensive. The incremental cost per QALY gained was -£1,048,954. **CONCLUSIONS:** This cost-effectiveness analysis demonstrates that everolimus likely dominates axitinib, i.e. it is more effective and less expensive compared with axitinib in the treatment of mRCC.

PCN151

COST-MINIMIZATION ANALYSIS OF TRASTUZUMAB INTRAVENOUS VERSUS TRASTUZUMAB SUBCUTANEOUS FOR THE TREATMENT OF PATIENTS WITH HER2+ EARLY BREAST CANCER AND METASTATIC BREAST CANCER IN GREECE

Mylonas C[1], Kourlaba G[2], Fountzilas G[3], Skroumpelos A[4], Maniadakis N[1]
[1]*National School of Public Health, Athens, Greece,* [2]*Collaborative Center for Clinical Epidemiology and Outcomes Research (CLEO), Athens, Greece,* [3]*Aristotle University of Thessaloniki School of Medicine, Thessaloniki, Greece,* [4]*Roche (Hellas) S.A., Athens, Greece*

OBJECTIVES: To conduct an economic evaluation comparing Herceptin subcutaneous formulation (Herceptin-SC) with -Herceptin intravenous formulation (Herceptin-IV), in the treatment of patients with human epidermal growth factor receptor 2-positive (HER2+) early and metastatic breast cancer (EBC-MBC), in the Greek health care setting. **METHODS:** A cost-minimization model was developed to compare the total cost of care, from the hospital perspective, for new and existing patients, over 18 cycles therapy course. Total cost of therapy reflects drug acquisition cost, consumables dispensed, hospital overheads, physician and other staff time. Costing data were obtained from official Government sources (in 2014) and resource utilization data from a local validation of an international time and motion study. Due to the short time horizon of the study, costs were not discounted. **RESULTS:** The mean total cost of therapy per patient on Herceptin-IV was estimated at €24,163 compared to €23,042 per patient receiving Herceptin-SC. Drug acquisition costs accounted for €22,630 and €22,579 of total therapy costs for Herceptin-IV and Herceptin-SC, respectively. Following drug acquisition costs, the administration cost was €518 and €161 for Herceptin-IV and Herceptin-SC, respectively. Moreover, the central venous access device cost was €290 and €0 of the total costs of Herceptin IV and Herceptin SC, respectively. Finally, overhead costs made up approximately €725 of the total cost for Herceptin-IV and €302 for Herceptin-SC. Sensitivity analysis showed that the results of the model were sensitive to drug acquisition costs and patient weight. **CONCLUSIONS:** The cost of treatment with Herceptin-SC is

lower than that with Herceptin-IV in the management of patients with HER2+ EBC and MBC. Hence, the substitution of Herceptin-IV with Herceptin-SC can produce valuable savings for the Greek health care system, especially in the current economic environment where hospitals' pharmaceutical budget has significantly been reduced.

PCN152

COST-MINIMIZATION ANALYSIS OF BEVACIZUMAB VERSUS CETUXIMAB IN FIRST-LINE TREATMENT FOR METASTATIC COLORECTAL CANCER IN KRAS WILD-TYPE PATIENTS IN THE SUPPLEMENTARY HEALTH CARE SYSTEM IN BRAZIL

Tsuchiya CT, Kim HSJ, Maximo MFM, Ramos LA
Roche Brazil, São Paulo, Brazil

OBJECTIVES: Due to increasing costs in cancer management, there is a crescent need to rationally allocate resources in health care systems. Recently, a head-to-head phase III study (CALGB80405) showed no significant difference in OS and PFS for first line (1L) mCRC in *KRAS wild-type (wt)* patients amongst bevacizumab (Bev) and cetuximab (Cet) – the most commonly used biologics in this setting. Since benefit of both drugs is comparable, the aim of the study was comparing treatment costs of Bev vs. Cet in 1L *KRAS wt* mCRC. **METHODS:** A cost-minimization analysis was conducted under payer perspective in Brazilian Supplementary Healthcare System. Backbone chemotherapy regimens (mFOLFOX6 and FOLFIRI) were based on CALGB80405 trial. Direct medical costs regarding drug acquisition, material and procedures/service fees were included. Adverse events management costs were excluded. The resource usage data was taken from the literature and drug labels. Costs were taken from CMED price list and UNIMED reimbursement lists. A univariate sensitivity analysis was conducted varying parameters from ±20% range. Results were reported in Brazilian Reais (BRL). **RESULTS:** The average monthly cost per patient was lower with Bev: BRL23'945 (Bev+mFOLFOX6) vs. BRL30'017 (Cet+mFOLFOX6) – reduction of 20.2% - and BRL23'008 (Bev+FOLFIRI) vs. BRL29'075 (Cet+FOLFIRI) – reduction of 20.9%. Average monthly cost per patient according to mFOLFOX6/FOLFIRI usage proportion reported on CALGB80405 was BRL23'699 (Bev) and BRL29'766 (Cet); considering PFS data presented in the trial, the average total treatment cost was estimated as BRL256'899 (Bev) and BRL311'060 (Cet). The sensitivity analysis showed that model was more influenced by Cet price, Bev price and patient height. **CONCLUSIONS:** Bev is a cost-saving choice for 1L KRAS *wt* mCRC in combination with chemotherapy, potentially achieving around 20% of reduction in monthly direct treatment costs compared to Cet, mainly because of Cet higher total acquisition costs and weekly administration schedule, resulting in additional resource consumption.

PCN153

ECONOMIC IMPACT OF USING SUBCUTANEOUS TRASTUZUMAB

Gutierrez F[1], Nazco G[1], Viña M[2], Bullejos M[1], Gonzalez I[1], Valcarcel C[3]
[1]*University Hospital of Canary Islands, La Laguna, Spain,* [2]*University Hospital of Nuestra Señora de la Candelaria, Santa Cruz de Tenerife, Spain,* [3]*Canary Islands Foundation for Health and Research, Santa Cruz de Tenerife, Spain*

OBJECTIVES: To analyze the economic impact of the incorporation of trastuzumab subcutaneous (TSC) in a University Hospital according to real data of our patients. **METHODS:** Retrospective cost minimization study that included patients diagnosed with breast cancer treated with trastuzumab intravenous (TIV) from april 2013 to april 2014. The demographic data of the patients (age and weight) and antineoplastic treatments used were obtained from the computer program Hospiwin®. An economic model was developed in Excel® data base, based on the dose used in previous clinical trials: IV loading dose of 8mg/kg and after 6mg/kg/3 weeks and SC fixed dose of 600 mg/3 weeks. The time horizon was one year and the perspective of medical leadership of the hospital was used. The Spain cost of TSC is not aproved yet. Two posibilities was analyzed: The cost of filing 600mg of TSC equal to the cost of a 68kg patient with TIV (situation A) and the cost of a 63kg patient with TIV (situation B). A sensitivity analisys included the cost of using an oncology chair (168€/treatment) was performed. **RESULTS:** During the study period 371 patients were treated for breast cancer. Of these 75 were treated with TIV (20.2%), with an average weight of 71.5 kg (SD=17.1) and a cost of 990,996.88€/per year. If all patients had been treated with TSC: Situation A the total spending would be 829,965.4€; situation B the total spending would be 768,938.5€. So the savings would be 161,031.4€ (19.4%) and 222,058.3€ (28.8%) respectively. If the cost of oncology chair (not necessary for the TSC) it´s included, the savings would be 253,549.4€ and 314,576.3 respectively. **CONCLUSIONS:** In this study we wanted to show how TSC saved costs in all of the situations analyzed. The TSC is a therapeutic innovation that helps promote the systems health´s sustainability.

PCN154

PHARMACOECONOMIC ANALYSIS OF ORAL CAPECITABINE AND TEGAFUR FOR COLORECTAL CANCER TREATMENT IN RUSSIA

Gerasimova K[1], Avxentyeva M[1], Rebrova O[2]
[1]*The Russian Presidential Academy of National Economy and Public Administration, Moscow, Russia,* [2]*Pirogov Russian National Research Medical University, Moscow, Russia*

OBJECTIVES: To conduct a pharmacoeconomic analysis of oral drugs, tegafur vs capecitabine, for advanced colorectal cancer (CRC) in adult patients. **METHODS:** Indirect comparison and network meta-analysis of clinical efficacy and safety of tegafur vs capecitabine and tegafur + calcium folinate vs capecitabine were performed. Cost-minimization analysis (CMA) with calculation of cost minimization difference was used for economic evaluation of studied drugs. **RESULTS:** There was no statistically significant difference in the full and partial objective tumor response between oral tegafur (both in monotherapy or in combination with calcium folinate) and capecitabine for advanced CRC treatment in an indirect comparison and network meta-analysis. Capecitabine vs tegafur + calcium folinate has less 3-4th grade stomatitis but there was no difference in the incidence of diarrhea and 3-4th grade nausea/vomiting. There was no difference in safety between tegafur and capecitabine monotherapy in terms of incidence of diarrhea, vomiting, stomatitis/mucositis. The hand-foot syndrome occurrred in less than 5% in case of tegafur. Tegafur (in monotherapy or in combination with calcium folinate) is less costly than capecitabine. The difference in costs in favor of tegafur monotherapy amounted to €1,956.97 per 1 patient per 6 months or €3,778.53 per year; of tegafur + calcium folinate - €2,168.12 and €4,220.06 per 1 patient per 6 and 12 months, respectively. **CONCLUSIONS:** Tegafur is a cost-saving option compared with capecitabine with similar efficacy and safety.

PCN155

COST-EFFECTIVENESS ANALYSIS OF BENDAMUSTIN-RITUXIMAB COMPARED TO CHOP-RITUXIMAB IN THE TREATMENT OF INDOLENT FOLLICULAR NON-HODGKIN LYMHOMA IN THE CZECH REPUBLIC

Mlcoch T[1], Klimes J[2], Kruntoradova K[2], Mandelikova M[1], Dolezal T[2]
[1]*VALUE OUTCOMES, s.r.o., Prague, Czech Republic,* [2]*VALUE OUTCOMES, Prague, Czech Republic*

OBJECTIVES: There is new RCT phase 3 clinical evidence that bendamustin-rituximab (B-R) is more effective in terms of progression free survival compared to the standard of care CHOP-rituximab (CHOP-R) in indolent non-Hodgkin lymphoma (iNHL). Based on this RCT, we performed a cost-utility analysis of B-R compared to CHOP-R in the treatment of follicular iNHL (stage III and IV) in the Czech Republic. **METHODS:** We developed a life-time Markov cohort model with 28-day cycle length and 5 health states, i.e. on treatment, rituximab maintenance (R-M), stable disease, progression and death. Additionally, we modeled adverse effects of treatment and four sub-states during progression (observation, imunochemotherapy, R-M, post R-M). Transition probabilities and utilities were derived from published literature. Resource use (costs) was calculated from health care payer's perspective in cooperation with major Czech hemato-oncologic experts. Costs and outcomes were discounted by 3.5%. Probabilistic sensitivity analysis (PSA) with 1000 iterations using a willingness to pay (WTP) threshold equal to 3 times GDP per capita (40 100 EUR) in the Czech Republic was performed. **RESULTS:** Over a life-time horizon, B-R compared to CHOP-R brings additional 1.21 QALY (7.47 vs. 6.26) and 1.31 LYG (9.74 vs. 8.43). The incremental total costs were 1,368 EUR (total life time costs for B-R and CHOP-R were 43,080 EUR and 41,712 EUR, respectively). ICERs thus equal to 1,133 EUR/QALY and 1,044 EUR/LYG. The results of the PSA show that B-R is cost-effective in 100% iterations under the WTP threshold; and simultaneously in 99.3% iterations is cost-effective while using threshold equal to 7,300 EUR. **CONCLUSIONS:** B-R proved that it is a highly cost-effective therapy in patients with follicular iNHL. The higher costs of initial bendamustin treatment are in the long-term horizon offset by substantial savings of progression costs. There is 100% probability of B-R being cost-effective at the selected WTP threshold.

PCN156

'DE NOVO' QUANTIFICATION OF GENOTYPE-DIRECTED THERAPY WITH AFATINIB IN METASTATIC LUNG CANCER

Zaim R[1], Tran L[2], Groen HJM[3], Uyl-de Groot CA[1]
[1]*Erasmus University, Institute for Medical Technology Assessment, Rotterdam, The Netherlands,* [2]*Boehringer Ingelheim BV, Alkmaar, The Netherlands,* [3]*University Medical Center Groningen, Groningen, The Netherlands*

OBJECTIVES: The inhibition of epidermal growth factor receptor (EGFR) signaling pathway by innovative therapeutics presents promising upshots in oncology. Our study aims to quantify first-line treatment with afatinib, an irreversible tyrosine kinase inhibitor, compared to pemetrexed+cisplatin (pem+cis), for patients with metastatic lung adenocarcinoma harboring common EGFR mutations (DEL19 or L858R) in the Netherlands. **METHODS:** An area under the curve partitioned survival model, constructed to quantify lifetime consequences of therapy with afatinib versus pem+cis, was amended to the Netherlands. The updated (2014) LUX-Lung 3 trial results and data from public sources were used to populate the model. Study outcomes were expressed in quality-adjusted life years (QALY), incremental cost-utility ratios (ICUR) and net monetary benefits (NMB). The analyses were conducted from health care and societal perspectives. Uncertainty assessment was performed using one-way and probabilistic sensitivity analyses (PSA). **RESULTS:** Metastatic lung adenocarcinoma patients with common EGFR mutations (89%) had higher overall survival when treated with afatinib compared to pem+cis (HR: 0.78, p=0.10). The corresponding base-case ICUR was <€20,000/QALY gained. For the subgroup of patients harboring DEL19 mutations (49%), treatment with afatinib resulted in cost-savings. Although NMB calculations were favorable for the genotype-directed therapy, inclusion of the entire patient population (all EGFR mutations) resulted in higher incremental costs. PSA results of lung adenocarcinoma patients with common EGFR mutations showed that afatinib is >95% cost-effective compared to pem+cis at a €80,000 threshold. **CONCLUSIONS:** This study shows that genotype-directed therapy with afatinib improved survival in metastatic lung adenocarcinoma and translated itself as value-for-money, particularly for the DEL19 subgroup, in the Netherlands. Further research is encouraged to compare afatinib with reversible EGFR inhibitors in this setting.

PCN157

MODEL-BASED COST–UTILITY ANALYSIS OF ERYTHROPOIESIS-STIMULATING AGENTS FOR THE TREATMENT OF CANCER-TREATMENT INDUCED ANAEMIA IN THE UK NHS

Snowsill T[1], Huxley N[1], Hoyle M[1], Crathorne L[1], Haasova M[1], Briscoe S[1], Coelho H[1], Medina-Lara A[1], Mujica Mota R[1], Napier M[2], Hyde C[1]
[1]*University of Exeter, Exeter, UK,* [2]*Royal Devon & Exeter NHS FT, Exeter, UK*

OBJECTIVES: To assess the cost–utility of erythropoiesis-stimulating agents (ESAs) in conjunction with red blood cell transfusions (RBCTs) in patients with cancer-treatment induced anaemia (CIA). **METHODS:** A cost–utility analysis from an NHS and personal social services perspective was conducted by developing an ad hoc economic model. A lifetime time horizon was used and outcomes were discounted at 3.5% per annum. All ESAs were assumed to have the same clinical effectiveness. Haemoglobin (Hb) levels were assumed to drive health-related quality of life (HRQoL), with haemoglobin linearly mapped to utility. This was used to calculate