based treatment effect for denosumab versus ZA to estimate the denosumab SRE rate. Total number of SREs, total SRE management medical cost, BTA drug cost, and total cost were calculated. The impact of denosumab per-member-per-month (PMPM) at increasing utilization rates was assessed by comparing to a scenario without denosumab, i.e., all patients received ZA and reported. Additionally, impact of annual increase in denosumab use was conducted. **RESULTS:** A total of 63 PrCa patients with BM received BTA. In the scenario where all eligible patients receiving ZA, an annual total number of SREs was 120. An annual denosumab use of 20%, 35% or 45% resulted in 4.2%, 7.4%, and 9.5% reduction in total SREs and 5.3%, 9.3%, and 11.9% reduction in medical costs of managing SREs, compared to all patients receiving ZA. The drug cost was partially offset by the reductions in the medical cost and the increase in total cost was minimal (1.2%-2.7%). The PMPM ranged $0.002-$0.005. Consecutive-year analysis showed $0.001 increase in PMPM with 10% denosumab utilization increase. **CONCLUSIONS:** Due to superior efficacy of denosumab versus ZA in SRE prevention in PrCa patients with BM, increased denosumab use results in medical cost reduction in a US MCO. Overall, denosumab provides additional clinical value with limited budget impact.

PCN40

BUDGET IMPACT ANALYSIS OF IPILIMUMAB FOR THE TREATMENT OF ADVANCED MELANOMA IN THE VENETO REGION, ITALY

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OBJECTIVES: Ipilimumab is the first drug to be licensed in Italy for the treatment of advanced melanoma in adults who have received prior therapy. This study aims to estimate the budget impact of ipilimumab in patients who live in the Veneto Region. **METHODS:** Our analysis was performed from the perspective of the Italian health care system. Two scenarios were analyzed: one with the optimization of vials and the other without. Only drug acquisition costs (measured in euro) were considered into the analysis. All costs were referred to year 2013. **RESULTS:** Based on the incidence and mortality rates of the last three years, a total of 80 adult patients were assumed to be elegible for the treatment in the Veneto Region. The cost per mg of ipilimumab was €53,70: one 10 ml vial contains 50 mg of ipilimumab and one 40 ml vial contains 200 mg of ipilimumab. The recommended induction regimen is 3 mg/kg administered intravenously every 3 weeks for a total of 4 doses. The costs per patient of one year's therapy with ipilimumab ranged from €45.108 with vial optimization (considering 4-5 patients infused at the same time - average weight 70 kg) to €53.700 without. The Veneto Region identified a single center for the preparation/administration of treatment to minimize drug waste and to reduce the yearly treatment cost per patient, with a saving of €8.592 per patient/year. Applied to whole elegible patients (average weight 70-75 kg), it allows to obtain savings up to €430.000-690.000 per year. **CONCLUSIONS:** High prices for new cancer drugs are a growing concern to payers, given the large number of cancer drugs in development and the limited health care resources. Vial optimization may be an useful strategy to decrease waste, maximizing the use of health care resources and ensuring that eligible patients are treated.

PCN41

ECONOMIC EVALUATION OF EPOETIN ALFA HEXAL (BINOCRIT) COMPARED TO DARBEPOETIN ALFA (ARANESP) IN THE TREATMENT OF CHEMOTHERAPY INDUCED ANEMIA (CIA) IN GERMANY

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OBJECTIVES: To compare the budget requirements of utilizing epoetin alfa Hexal vs. darbepoetin alfa in the German health care system **METHODS:** Anemia is a common side effect observed in patients receiving myelosuppressive chemotherapy. The purpose of this pharmacoeconomic analysis was to evaluate the cost-effectiveness of the short-acting biosimilar ESAs epoetin-alfa Hexal (EA) 30,000 or 40,000 IU weekly (QW) versus long-acting erythropoiesis-stimulating agent (ESA) darbepoetin alfa (DA) 150 mcg weekly (QW) and 500 mcg once every 3 weeks (Q3W) for the treatment of CIA. A budget impact model was constructed employing a payer perspective, per patient plus 5 year time horizon. The treatment period considered was based on 12 weeks and was aligned with routine chemotherapy regimen administration. Model inputs included: medical treatment, outcomes, and health care service utilization from published clinical studies and summary of product characteristics recommendation. Effectiveness of therapeutic alternatives was determined by comparing hemoglobin maintenance rates. Initial treatment with biosimilar epoetin α 30,000 IU or 40,000 IU per week has been shown to produce a similar Hb response. Costs included only drug acquisition costs and reflect 2013 data. The analysis was performed from the perspective of the German health care system. **RESULTS:** The average expected pharmaceutical costs per patient were €4,843 for DA Q3W, €4,383 for DA QW and €2,944 for EA 30,000IU QW, €3,946 for EA 40,000IU QW. Cost-savings associated utilizing with utilizing Epoetin Alfa Hexal 30-40,000 are 11-49% to DA QW and were 23-64% relative to DA 3QW. **CONCLUSIONS:** In the treatment of CIA among cancer patients in Germany, epoetin alfa Hexal is projected to provide more efficient use of health care resources compared to alternative treatment strategies with darbepoetin alfa.

PCN42

A BUDGETARY IMPACT ANALYSIS MODEL FOR EVEROLIMUS IN THE TREATMENT OF ER+ HER2- METASTATIC BREAST CANCER IN ENGLAND AND WALES

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OBJECTIVES: Whilst the cost-effectiveness of everolimus + exemestane (EVE+EXE) versus placebo + exemestane (PBO+EXE) in patients with ER+ HER2- metastatic breast cancer has been demonstrated elsewhere, this is the first analysis to assess the implications for health spending at a population level. **METHODS:** The model uses a cumulative cohort approach, allowing incident patients to enter the model each year over a five-year period. The incident population was based on several factors: (i) the female population aged >15 years; (ii) the proportion of those women with advanced invasive breast cancer; (iii) the proportion who are post-menopausal; (iv) the proportion who are hormone receptor positive; (v) the proportion who are HER2-; (vi) the proportion with asymptomatic visceral disease, and (vii) the proportion for whom hormonal therapy is appropriate. Finally, the cohort was filtered to show those who had previously relapsed or progressed on NSAI. 'Per patient' treatment and adverse event costs were generated based on treatment-specific progression-free survival curves, and multiplied by the number of patients expected to receive each treatment according to market share data and likely uptake rates. An incremental analysis was performed, where two scenarios were compared: (i) a world without EVE+EXE, and (ii) a world with EVE+EXE. **RESULTS:** It is expected that a total of 1,052 patients will be eligible to receive EVE+EXE over a five-year period. In a 'world without EVE+EXE', the total five year cost was estimated as £1,652,904. Assuming an annual uptake rate of 10%, in a 'world with EVE+EXE' the total cost over the same period was expected to be £2,271,606. Therefore, the incremental cost associated with the introduction of EVE+EXE in England and Wales is £618,702 over five years. **CONCLUSIONS:** EVE+EXE was associated with modest increased health care costs but has, separately, been demonstrated to lead to incremental health benefits compared with other treatments.

PCN43

INCORPORATING STAKEHOLDER INPUT INTO BUDGET IMPACT MODELS TO COMPARE STEM CELL MOBILIZATION STRATEGIES

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OBJECTIVES: There is a dearth of published health economic evidence on stem cell (SC) mobilization that can be leveraged effectively for transplant center decision making. Our objective was to develop representative budget impact models (BIM) for key decision makers to estimate the total financial impact of adopting plerixafor for SC mobilization patients undergoing autologous peripheral stem cell transplantation (ASCT) for multiple myeloma and lymphoma. The BIMs were developed for EU5 (France, Germany, Italy, Spain, UK) and United States (US). **METHODS:** Prior to BIM development, in-depth interviews were conducted in EU5 (n=33) and US (n=20), to determine the most influential decison maker(s) for choosing a mobilization regimen. The choice of inputs and outputs that are critical for the adoption of plerixafor at the hospital level, were determined. Additionally, the BIM was developed using inputs from published literature and market research. **RESULTS:** Primary research revealed that the center director and treating physician are the most influential decision makers, while hospital administrators, transplant coordinators, pharmacy directors, and apheresis directors have a more limited role. There was consensus on inputs critical for assessment: clinical (drug/regimen utilization, apheresis days, and success/failure rates) and economic (mobilization costs; drug costs; apheresis cost and hospitalization costs). Model outputs include: first mobilization success and total mobilization budget impact. Interviews with clinical experts, and primary literature review determined that the relevant mobilization regimen comparators for the models are Granulocyte-Colony Stimulating Factor (G-CSF) alone, G-CSF and plerixafor, G-CSF and chemotherapy mobilization with cyclophosphamide and the triple regimen G-CSF, chemotherapy mobilization and plerixafor. **CONCLUSIONS:** Conducting primary interviews with key stakeholders and using the latest clinical practice information for critical inputs/outputs is essential for developing a representative model that is applicable to decison makers.

PCN44

BREAST CANCER SCREENING PROGRAM IN THE BASQUE COUNTRY: COSTS AND HEALTH BENEFITS ASSESSMENT THROUGH DISCRETE EVENT SIMULATION

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OBJECTIVES: In the Basque Country (Spain), mammographies have been done in biennial basis to women in their fifties and sixties since 1996. The main objective of this project was the evaluation of the impact of the Screening program in terms of costs and health in the Basque women population since 1996. **METHODS:** A discrete event simulation model was built to represent the natural history of breast cancer in women invited to the breast cancer screening program in the Basque Country. The disease progress was described in three main states (healthy, preclinical and clinical) in the model. We assumed all women would be diagnosed at the beginning of the clinical stage unless it had been diagnosed previously through the screening program. The data collected among the 15 years when the screening program was held allowed model's validation. In order to compare the economic impact of these scenarios mammography and treatment costs – depending on the diseasestage at diagnosis – were included. The health impact assessment was based on quality adjusted life expectancy of cancer patients. **RESULTS:** Since the screening program started working, 8,925 cancers were detected among 313,475 women who attended the screening which represents the 76% of the invited ones. 60% of the diagnosed cancers were detected through the screening program. All the mammographies carried out during the evaluated years costed 46 million Euros. Each cancer detected in the screened scenario costs 29,581.06€, in the

background scenario the cost was 29,639.22€. In terms of total costs the background scenario had a lower cost on average until the year 2009. **CONCLUSIONS:** Early detection of breast cancer improves survival prognosis and decreases treatment costs for each detected cancer. In the future, the costs of the early detection program will be balanced by the savings in treatment costs.

PCN45

ESTIMATING THE BUDGET IMPLICATIONS OF RADIUM RA 223 DICHLORIDE IN CASTRATION-RESISTANT PROSTATE CANCER PATIENTS WITH NON-VISCERAL BONE METASTASES TREATED IN INFUSION CENTERS IN THE UNITED STATES

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OBJECTIVES: Metastatic prostate cancer (MPC) results from the spread of cancer to distant parts of the body and is associated with markedly decreased survival. First line therapy for prostate cancer involves androgen deprivation, however most MPC patients progress in spite of castration levels of testosterone. A recently approved infusion product, Radium Ra 223 dichloride (Radium-223), has been introduced in the U.S. market adding to concerns about the costs for end-stage treatments. We sought to estimate the budget impact of Radium-223 on infusion center expenses in the U.S. **METHODS:** We developed a financial model to estimate budget impact from a hospital-based infusion center perspective. Using data from the U.S. Census, SEER, and the Premier Perspective Database, we estimated the eligible population using a theoretical hospital's catchment area. We modeled use, treatment costs and reimbursement for three radiopharmaceuticals (Radium-223, Samarium-153, and Strontium-89) and two common chemotherapies (docetaxel and cabazitazel) in terms of drug cost, infusions, and laboratory monitoring. Reimbursement for these treatments was estimated at both commercial and Medicare rates using the Average Sale Price and relevant Common Procedural Technology codes. We calculated total cost and reimbursement for one year with the current utilization from Premier and then estimated the incremental net budget impact associated with adoption of Radium-223 at 1, 3, and 5% of patients. **RESULTS:** In a catchment area of 1 million lives, an estimated 45 MPC patients with non-visceral bone metastases would be treated with current agents and incur approximately $500,000 in treatment costs for radiopharmaceuticals and chemotherapy. Adding Radium-223 to the treatment mix and assuming adoption rates of 1% to 5%, the annual net impact on the infusion center budget would range from $600 to $3,000. **CONCLUSIONS:** Radium-223 presents a new treatment option for MPC patients with non-visceral bone metastases and a positive net impact for infusion centers.

PCN46

ESTIMATING THE BUDGET IMPACT OF ADDING AVASTIN (BEVACIZUMAB) TO FRONT LINE TREATMENT FOR ADVANCED OVARIAN CANCER IN BRAZILIAN SUPPLEMENTARY HEALTH CARE SYSTEM

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OBJECTIVES: Ovarian cancer (OC) is one of the most lethal gynecologic cancers worldwide. According to Brazilian Institute of Cancer (INCA), 6,190 new OC cases were estimated in 2012. During the last 15 years, carboplatin plus paclitaxel (CP) has been established as front-line (FL) standard of care therapy for advanced ovarian cancer, with no significant advances in treatment ever since. Bevacizumab (Bev) in combination with CP was approved in Brazil for FL treatment of advanced epithelial OC on May/2013. Therefore, this study aimed to estimate the economic impact of bevacizumab reimbursement for advanced OC in Brazilian Supplementary Healthcare System. **METHODS:** The potential number of eligible patients for CP + Bev in FL therapy for advanced OC was estimated following an epidemiologic approach. It was assumed that Supplementary Healthcare System attendance accounts for 40% of all patients. Additional drug costs and infusion fees were evaluated. The ex-factory price (VAT 18%) and labeled dose were considered. Average therapy duration of CP + bevacizumab was 15 months based on GOG-0218 trial. Costs were reported in Brazilian Reais (BRL1.00≈USD0.44; Jun/2013). A total health assistance budget of BRL 88.1 billion was forecasted for 2013, based on the last updated data from Brazilian National Regulatory Agency for Private Health Insurance and Plans (ANS). **RESULTS:** A total of 1,287 eligible cases in CP + Bev FL therapy for advanced OC are expected in 2013 in the private setting. Adding bevacizumab to the treatment of all these potential patients would yield an increase of BRL 267 million, corresponding only to an increment around 0.30% on health assistance expenses. **CONCLUSIONS:** Treating all eligible FL advanced OC patients with CP + Bev will potentially result in a low impact in Supplementary Healthcare System budget, associated to unprecedented clinical benefits for this population with a high medical unmet need.

PCN47

THE FRENCH PUBLIC HEALTH CARE SYSTEM: AN ORIGINAL WAY FOR COST SAVING

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OBJECTIVES: The patent expiries of leading biologic products and development of biosimilars create opportunities for cost saving. The french public health policies has established a complementary means encouraging heathcare facilities (HF) to save money : the "écart médicament indemnisable" (EMI). We explored the evaluation of EMI on the erythropoietic factors class. **METHODS:** We've carried out a comparative study in french HF, representing about 65% of national hospital beds, on the price of erythropoietic factors. The data have been collected on procurement procedures operative as at January 1, 2012. **RESULTS:** A total of 25 care facilities or group of care facilities agreed to participate in the study. The overall sales turnover reached 15 millions euros (M€). All HF granted a discount from 5% to 69% on the prices fixed by negociation between the Comité Economique des Produits de Santé and the manufacturers. The average discount ranges from 11% to 73%. The average EMI varies between 1.42 and 2.69 € excluding value added tax (EVAT) per 1000 international units and between 0.09 and 0.22 € EVAT per microgram according to the medicinal product. The average amount refunded to HF can be estimated at january 1, 2012 at 3.37 M€, or 22.6% of the total budget. We assessed annual prices trends based on starting dates of contract, and we could figure out EMI trends. According to the product, the EMI quickly decline, remain broadly stable or increase. **CONCLUSIONS:** Many of top-selling biologics are due to lose patent protection over the next years. The emergence of competition in pharmaceutical market contributes to better control expenditure in our health system. The great potential for cost savings concerning erythropoietic factors in our study could be investigated in other class of medicinal products.

PCN48

BUDGET IMPACT ANALYSIS OF FENTANYL BUCCAL TABLET FOR THE TREATMENT OF CANCER BREAKTROUGH PAIN

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OBJECTIVES: To assess the economic impact of Fentanyl Buccal Tablet for the management of breakthrough cancer pain (BTcP) in Spain **METHODS:** A 4-year budget impact model was developed for the period 2012-2015 for patients with BTcP from the perspective of the Spanish National Health System. BTcP products included in this model were rapid onset opioids containing fentanyl products (buccal, sublingual, or nasal transmucosal). Prevalence data on cancer, BTcP, opioid use and number of BTcP episodes were obtained from literature. Input data on direct medical resources associated with opioid use and opioide-induced side effects (OISEs) were obtained by consulting experts in oncology from different Spanish hospitals. Resource utilisation included drugs, medical and emergency visits, other non-pharmacological treatments and the treatment of OISEs. Unit costs were obtained from literature and a 3% discount rate was applied to costs. Based on the unit costs for drugs and medical resources the annual BTcP treatment costs per patient associated with each product were determined, to estimate the overall budget impact based on the total treatment population and the percentage of drug utilisation associated with each product **RESULTS:** Patients treated with oral opioids for BTcP was estimated at 23,291 in 2012 with an increase up to 23,413 in 2015. The average annual budget savings with an increase of Fentanyl Buccal Tablet, Fentanyl Sublingual Tablet and Intranasal Fentanyl Spray and a decrease of Oral Transmucosal Fentanyl Citrate, was estimated at €2.6 million over the next four years **CONCLUSIONS:** The increase in the use of Fentanyl Buccal Tablet leads to overall savings in the budget impact for the Spanish NHS. Although the economic impact of BTcP treatment showed to increase over the next four years due to population growth the average annual cost per patient reduced with €29 by the increase in the use of Fentanyl Buccal Tablet.

PCN49

ECONOMIC IMPACT OF DENOSUMAB FOR SKELETAL RELATED EVENT PREVENTION IN PATIENTS WITH BREAST CANCER AND BONE METASTASIS FROM A UNITED STATE MANAGED CARE ORGANIZATION PERSPECTIVE

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OBJECTIVES: To evaluate clinical and economic impact of increasing denosumab use compared to zoledronic acid (ZA) in BrCa patients with BM to a MCO. **METHODS:** An economic model was developed to estimate clinical and economic impact to a 1-million-member US MCO of introducing denosumab as bone-targeting agent (BTA) for prevention of SREs in BrCa patients with BM. Total number of patients receiving BTA was estimated based on disease prevalence and treatment eligibility in this population. The real-world SRE rates in ZA-treated patients were derived from a large commercial database and used together with the trial-based treatment effect for denosumab versus ZA to estimate the denosumab SRE rate. Total number of SREs, total SRE management medical cost, BTA drug cost, and total cost were calculated. The impact of denosumab per-member-per-month (PMPM) at increasing utilization rates was assessed by comparing to a scenario without denosumab, i.e., all patients received ZA. Additionally, impact of annual increase in denosumab use was conducted. **RESULTS:** A total of 122 BrCa patients with BM received BTA. In the scenario where all eligible patients receiving ZA, an annual total number of SREs was 155. An annual denosumab use of 20%, 35% or 45% resulted in 4.5%, 7.9%, and 10.2% reduction in total SREs and 5.7%, 10.1%, and 12.9% reduction in medical costs of managing SREs, compared to all patients receiving ZA. The drug cost was partially offset by the reductions in the medical cost and the increase in total cost was minimal (2.4%-5.5%). The PMPM ranged $0.008-$0.017. Consecutive-year analysis showed $0.004 increase in PMPM with 10% denosumab utilization increase. **CONCLUSIONS:** Due to superior efficacy of denosumab versus ZA in SRE prevention in BrCa patients with BM, increased denosumab use results in medical cost reduction in a US MCO. Overall, denosumab provides additional clinical value with limited budget impact.

PCN50

POTENTIAL LONG-TERM COST SAVINGS DUE TO SIGNIFICANT CLINICAL BENEFIT OF OBINUTUZUMAB (GA101) IN COMBINATION WITH CHLORAMBUCIL IN PREVIOUSLY UNTREATED CHRONIC LYMPHOCYTIC LEUKEMIA

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OBJECTIVES: Obinutuzumab is the first, glycoengineered type II antibody demonstrating increased Antibody-Dependent Cell-Mediated Cytotoxicity (ADCC) and