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

direct cell death compared with rituximab (Rtx) and is pending regulatory approval (in combination with chlorambucil (Clb)) for the treatment of patients with previously untreated chronic lymphocytic leukemia (CLL). Obinutuzumab+Clb has shown >85% reduction in the risk of progression, relapse or death in comparison to treatment with Clb alone (HR 0.14), a broadly accepted treatment option for many patients with co-existing medical conditions. In a majority of markets the health economic consequences will be assessed in terms of affordability. **METHODS:** A health economic model was developed analyzing the cost impact of obinutuzumab on further lines of treatment due to the number of reduced refractory patients compared to Clb and Rtx. Market share information for obinutuzumab, ofatumumab, Rtx, Clb and Bendamustine and the different relevant combinations were entered for Germany and Canada (Ontario province only). **RESULTS:** Based on a 39% reduction in numbers of refractory patients treated with obinutuzumab+Clb compared to Rtx+Clb cost savings per year per patient (PYPP) for further line treatments in Canada (Ontario) range between Ca$950 and Ca$3,091, which leads to maximum cost savings for the whole eligible population (401 patients) up to $Ca1,239,491. In Germany the cost savings range PYPP between €2,556 and €8,318, which leads to maximum cost savings for the whole eligible population (1,302 patients) up to €10,830,036. The big difference in the cost savings PYPP between the two countries is mainly due to the different market share assumptions for ofatumumab. Key cost drivers were treatment duration and price/cost of further line treatments. Scenario analyses on cost, efficacy and market share data confirmed these findings. **CONCLUSIONS:** Obinutuzumab+Clb shows significant patient-relevant clinical benefits and potential cost savings in further line treatments in patients with previously untreated CLL.

PCN51

PHARMACOECONOMIC ASPECTS OF CHRONIC PAIN MANAGEMENT IN RUSSIAN CANCER PATIENTS

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OBJECTIVES: To assess the cost-effectiveness of the new transdermal therapeutic system (TTS) of fentanyl and subcutaneous injections (SIs) of morphine hydrochloride in the treatment of chronic pain and predict potential budget impact of the implementation of fentanyl TTS in routine clinical practice. **METHODS:** The pharmacoeconomic model was developed based on the results of Russian observational study, included 45 patients with terminal cancer: 25 patients received fentanyl TTS and 20 – SIs of morphine. At the first stage, the cost-effectiveness ratios (CERs) of therapies during the first month was measured as total costs of medicines and expenses for ambulance services for acute pain relief per one patient without side-effects. At the second stage, the CERs of therapies during subsequent three months was measured as costs of medicines per one unit of pain intensity (PI) reduction (visual pain scale). **RESULTS:** During the first month of therapy the frequency of ambulance use was significantly lower in patients received fentanyl TTS (0.32 vs 1.05 per one patient per week in the morphine group), this was reflected in lower total costs (12 611, 42 RUB and 23,037.54 RUB per one patient, respectively). Patients in the fentanyl TTS group were less likely to have side effects. The estimated CERs for fentanyl TTS and SIs of morphine were 13,001.46 RUB and 27,756.07 RUB per one patient without vomiting and 23,354.47 RUB and 82,276.93 RUB per one patient without constipation, respectively. Long-term treatment with fentanyl TTS was resulted in decreased PI as compared to SIs of morphine. The three-month CERs were 4,897.05 RUB and 7,869.30 RUB per one unit of PI reduction, respectively. **CONCLUSIONS:** The present study has demonstrated that administration of new transdermal therapeutic system of fentanyl has the better cost-effectiveness profile in the treatment of Russian cancer patients.

PCN52

BUDGET IMPACT OF LIPEGFILGRASTIM FOR THE MANAGEMENT OF CHEMOTHERAPY-INDUCED NEUTROPENIA

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OBJECTIVES: Chemotherapy-induced neutropenia (CIN), a commonly-occurring adverse event in cancer patients undergoing chemotherapy, and particularly febrile neutropenia (FN), have potentially life-threatening and costly consequences. The standard of care for patients at risk of FN comprises prophylactic administration of recombinant granulocyte colony-stimulating factor (G-CSF) with pegfilgrastim, a long-acting formulation of G-CSF, and the most widely used in Europe. Lipegfilgrastim is a novel, pegylated and glycosylated long-acting G-CSF designed for use in the same patient population as pegfilgrastim. We developed a model to estimate the economic impact over five years of managing G-CSF-eligible chemotherapy patients at risk of FN with lipegfilgrastim rather than pegfilgrastim in Scotland. **METHODS:** The eligible patient population was estimated based on cancer incidence in Scotland and current uptake of G-CSF by patients initiating chemotherapy to prevent neutropenia. Drug, monitoring and event costs were taken from the British National Formulary, Unit Costs of Health and Social Care and Scottish National Tariff. As lipegfilgrastim was shown to be non-inferior to pegfilgrastim (in a phase III study in breast cancer patients), the efficacy and safety of pegfilgrastim and lipegfilgrastim were assumed to be identical. Non-statistically significant trends towards fewer neutropenic events and dose modifications with lipegfilgrastim were explored in scenario analyses. **RESULTS:** The model estimated that 315 patients currently receive pegfilgrastim annually. A progressive increase in lipegfilgrastim uptake was associated with cost savings ranging from £2,814 in year 1 to £16,883 in year 5, totalling £61,904 over five years. Savings were attributable to the low drug acquisition cost of lipegfilgrastim. Using event rates from the pivotal phase III breast cancer study, scenario analyses suggested that using lipegfilgrastim instead of pegfilgrastim generated savings of £145,312, avoided 81 neutropenic events (including 11 occurrences of FN) and 50 dose modifications, and caused 34 additional treatment-emergent adverse events. **CONCLUSIONS:** Lipegfilgrastim was cost-saving compared with pegfilgrastim.

PCN54

SAFETY PROFILE AND COSTS OF RELATED ADVERSE EVENTS OF TRASTUZUMAB EMTANSINE COMPARED TO OTHER REGIMENS IN THE CANADIAN HEALTH CARE SYSTEM

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OBJECTIVES: Trastuzumab emtansine (T-DM1) is an antibody–drug conjugate comprised of the microtubule inhibitory cytotoxic agent DM1 and trastuzumab which, in addition to its antitumor properties, targets T-DM1 to HER2–overexpressing cells. The overall safety profile of T-DM1 was investigated in the phase III EMILIA trial (comparing T-DM1 [n=496] to capecitabine plus lapatinib [CAP+LAP, n=495]) in patients with HER2-positive locally advanced or metastatic breast cancer (MBC) previously treated with trastuzumab and a taxane, and the phase II TDM4450g trial (comparing T-DM1 [n=67] to trastuzumab plus docetaxel [TRAZ+DOCE, n=70]) in patients with previously untreated MBC. Both trials demonstrated clinically meaningful differences between T-DM1 and its comparators. The objectives were to estimate and compare the Canadian costs of managing the treatment-related adverse events (AEs) of T-DM1 as reported in the two trials, from the perspective of Canadian public payers. **METHODS:** An Excel based spreadsheet model was utilized for the analysis. Costing information was obtained from the literature, clinical experts, and Canadian standard costing sources. Costs were reported as 2012 CAD. The AEs that were considered were all treatment-related grade ≥3 AEs as well as grade 2 AEs that occurred in ≥5% of patients in both arms of either study. **RESULTS:** The management of treatment-related AEs as reported in the EMILIA trial resulted in higher per patient costs ranging from $3,060 - $10,499 for CAP+LAP versus $1,376 - $2,463 for T-DM1, yielding savings of $1,684-$8,036. In the TDM4450g trial, the management of treatment-related AEs resulted in higher per patient costs ranging from $5,124 - $27,617 for TRAZ+DOCE versus $798 - $2,215 for T-DM1, yielding savings of $4,326-$25,402. **CONCLUSIONS:** This analysis demonstrated that utilizing T-DM1 for the management of HER2-positive metastatic breast cancer results in significant cost savings of related AEs management due to the improved safety profile compared to CAP+LAP and TRAZ+DOCE.

PCN55

A COST-ANALYSIS OF STEREOTACTIC RADIOTHERAPY IN LUNG CANCER

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OBJECTIVES: Stereotactic radiation therapy is an innovative technique with high therapeutic potential due to excellent local control and increased survival rate. A cost analysis investigating stereotactic radiation therapy modalities either with linear accelerator (Cone Beam Computed Tomography (CBCT), Exac-trac) or Cyberknife was conducted. **METHODS:** The cost-analysis was performed prospectively based on a multicenter study. Patients included were treated for lung carcinoma (T1-T2, N0, M0). Cost calculations were strictly based on a micro costing approach according to the hospitals' point of view. Only direct costs were taken into account. Productivity losses of personnel involved in the process, costs of administrative personnel, costs of logistics and general management were not taken into account. Time horizon included radiation therapy (preparation for radiation therapy and the fraction itself). All costs were given in 2011 euros. Uncertainty was captured by one-way and probabilistic sensitivity analyses using a non-parametric bootstrap method. **RESULTS:** 113 patients were enrolled in 11 French centers from April 2009 to December 2011. 98 economic questionnaires were exploitable. The costs of preparation for stereotactic radiation therapy were 430€ (SD: 101€) with Cyberknife and 433€ (SD: 199€) with linear accelerator. When required, costs of implementation of fiducial markers with one/two days of inpatient care were 1,619€. The costs of stereotactic radiation therapy (all fractions included) were 1,811€ (SD: 760€) with Cyberknife and 817€ (SD:403€) with linear accelerator. Costs per fraction were 550€ (SD: 224€) with Cyberknife and 201€ (SD: 97€) with linear accelerator. Depreciation periods of the accelerator played a major role in costs. **CONCLUSIONS:** This is to our knowledge the first study highlighting costs incurred by different stereotactic radiation therapy modalities in lung cancers. Cost-effectiveness studies have to be conducted in order to shed further light on which modality to focus on.

PCN56

COST OF ADVERSE EVENTS DURING TREATMENT WITH EVEROLIMUS PLUS EXEMESTANE OR SINGLE-AGENT CHEMOTHERAPY IN PATIENTS WITH ADVANCED BREAST CANCER

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OBJECTIVES: Everolimus plus exemestane (EVE+EXE) recently received approval for the treatment of patients with HR+/HER2- advanced breast cancer that recurs or progresses during/after non-steroidal aromatase inhibitors. This study was designed to evaluate the expected costs of managing adverse events during EVE+EXE therapy and single-agent chemotherapy in the western European region. **METHODS:** An economic model was developed to estimate per-patient cost of managing adverse events for patients receiving EVE+EXE or chemotherapies. Adverse event rates for EVE+EXE were collected from the phase III BOLERO-2 trial. Adverse event rates for capecitabine, docetaxel, and doxorubicin chemotherapies were collected from published clinical trial data. Grade 3/4 adverse events with at least 2% prevalence during any of these treatments were included in the study. The adverse event rate