this patient population, with a focus on related hospitalizations and costs. 

**Methods:** Men receiving ADT with ⩾2 claims for a diagnosis of PC were identified in the Claims and Medical data set (1/1/2009–12/31/2018). Index date was the first ADT claim. Patients were required to be continuously enrolled 6-months pre- and ⩾2 months post-index. Patients with a major adverse cardiovascular event (MACE: myocardial infarction, cerebrovascular accident, unstable angina, percutaneous coronary intervention, and/or coronary bypass graft) post index and insurance eligibility for ⩾30 days after MACE were identified. Thirty-day (30) post-MACE hospitalizations and MACE-related costs (2018 USD) were assessed. **Results:** The study included 49,135 men with ADT on ADT; 8,102 patients (16.5%) experienced a MACE during the whole study period. A total of 6,754 (13.7%) qualified for the post-MACE analysis; most had Medicare (86.6%) coverage. In the 30-day post-event, a high proportion of patients incurred a MACE-related hospitalizations (Medicare: 46.0%; Commercial: 45.3%); inpatient costs among patients with Medicare and Commercial insurance were $36,185 (SD: $26,624) and $55,132 (SD: $69,539) in Medicare and commercial patients, respectively.**Conclusions:** PC patients treated with GnRH agonists are at increased risk of CV events. When MACE occurs, patients likely require a hospital stay.

---

**PCN152**

**THE BURDEN OF SKELETAL-RELATED EVENTS IN FOUR LATIN AMERICAN COUNTRIES: ARGENTINA, BRAZIL, COLOMBIA, AND MEXICO**


**Methods:** The estimated total number of SREs was 251,503 in 2020, 15% of which were in Brazil ($62,654) and $55,322 (SD: $69,539) in Medicare and commercial patients, respectively. Conclusions: Preventative treatments are needed to decrease the clinical and economic burden of SREs. Early detection of bone metastases and SREs, and the use of the most effective preventative treatments are needed to decrease the clinical and economic burden of SREs.

---

**PCN153**

**USING A BUDGET IMPACT MODEL (BIM) AS A DECISION-MAKING TOOL AT THE HOSPITAL LEVEL IN FRANCE: AN EXAMPLE OF CPX-351 IN PATIENTS WITH NEWLY DIAGNOSED THERAPY-RELATED AML (T-AML) OR AML WITH MYELODYPLASIA-RELATED CHANGES (AML-MRC)**

Monnier R, Bourgignon S, Guindeul G, Pawlik M

**Methods:** Model inputs were informed from a literature review and expert opinion. Hospital-specific inputs were used, where possible. For each country, we estimated the prevalence of patients with bone metastasis from prostate cancer, breast cancer, and other solid tumors, as well as patients with multiple myeloma and bone lesions, and the annual number of SREs for each patient group. Aggregate SRE management costs for vertebral fractures, non-vertebral fractures, radiation to bone, spinal cord compression, and surgery to bone were obtained from country-specific sources. Productivity losses were also calculated. Costs were expressed in 2020 USD for the total annual burden, annual burden per 1,000 at risk, and projected five-year burden.

**Results:** The estimated total number of SREs was 251,503 in 2020, resulting in a total annual cost of approximately $14.4 billion. The projected five-year cost was $69.9 billion. Annual costs were highest in Brazil ($36.185 million), followed by Mexico ($28.18 million), Argentina ($17.46 million), and Colombia ($120.1 million). The average annual burden per 1,000 at risk was highest in Brazil ($3.6 million), followed by Mexico ($3.4 million), Colombia ($2.9 million), and Argentina ($2.8 million). Over the next five years, patients will experience approximately 1,282,594 SREs in Argentina, Brazil, Colombia, and Mexico. Based on expert input and market research, 35%-70% of patients with advanced solid tumors currently do not receive treatment for the prevention of SREs. Early detection of bone metastases and SREs, and the use of the most effective preventative treatments are needed to decrease the clinical and economic burden of SREs.

---

**PCN154**

**BUDGET IMPACT ANALYSIS OF LIPOSOMAL IRINOTECAN FOR TREATMENT OF METASTATIC ADENOCARCINOMA OF PANCREAS FOLLOWING PROGRESSION ON GEMCITABINE-BASED THERAPIES FROM GREEK PAYER’S PERSPECTIVE**

Chatzigiannoglou V, Kastanioti C, Papazisis G, Kouvelas D, Servier Hellas Pharmaceuticals Ltd, Athens, Greece, Department of Business Administration & Organizations, University of Pompelonne, Pompelonne, Greece, Department of Clinical Pharmacology, Faculty of Medicine, Aristotle University of Thessaloniki, Thessaloniki, Greece

**Methods:** A budget impact model was developed from third-party payer perspective over a 5-year time horizon to estimate the financial impact of liposomal irinotecan by obtaining market share from available treatments options. Based on local experts, patients with mPDAC who are currently treated with FOLFOLV, FOLFIRI, FOLFRINOX, capcitabine and nab-paclitaxel, which represent the common clinical practice in the absence of any other recommendation. The model framework considered market share share with and without liposomal irinotecan and reimbursed costs of treatment applied to the eligible patient population. Data on the number of eligible patients were estimated from the published literature and local experts, while the projected uptake of liposomal irinotecan was provided by Servier. Drug acquisition costs were considered in the analysis and were retrieved from the Greek Ministry of Health. The model measured outcome was incremental budget impact from the introduction of liposomal irinotecan as a treatment option for patients with metastatic pancreatic cancer (mPDAC) who have previously received gemcitabine-based regimens in Greek health system.

**Conclusions:** The estimated total number of SREs was 251,503 in 2020, of which the number of eligible patients was $1,321,695 for years 1 to 5 respectively, resulting in a total 5-year budget impact of €4,676,928. Conclusions: The regimen of liposomal irinotecan plus FOLFOLV was a treatment option for patients with mPDAC after disease progression following gemcitabine-based therapies, providing incremental clinical and economic benefits. The model framework considers the budgetary impact from the introduction of liposomal irinotecan by obtaining market share from available treatments options. Based on local experts, patients with mPDAC who are currently treated with FOLFOLV, FOLFIRI, FOLFRINOX, capcitabine and nab-paclitaxel, which represent the common clinical practice in the absence of any other recommendation. The model framework considered market share with and without liposomal irinotecan and reimbursed costs of treatment applied to the eligible patient population. Data on the number of eligible patients were estimated from the published literature and local experts, while the projected uptake of liposomal irinotecan was provided by Servier. Drug acquisition costs were considered in the analysis and were retrieved from the Greek Ministry of Health. The model measured outcome was incremental budget impact from the introduction of liposomal irinotecan as a treatment option for patients with mPDAC who have previously received gemcitabine-based regimens in Greek health system. The estimated total number of SREs was 251,503 in 2020, of which the number of eligible patients was $1,321,695 for years 1 to 5 respectively, resulting in a total 5-year budget impact of €4,676,928. Conclusions: The regimen of liposomal irinotecan plus FOLFOLV was a treatment option for patients with mPDAC after disease progression following gemcitabine-based therapies, providing incremental clinical and economic benefits. The model framework considers the budgetary impact from the introduction of liposomal irinotecan by obtaining market share from available treatments options. Based on local experts, patients with mPDAC who are currently treated with FOLFOLV, FOLFIRI, FOLFRINOX, capcitabine and nab-paclitaxel, which represent the common clinical practice in the absence of any other recommendation. The model framework considered market share with and without liposomal irinotecan and reimbursed costs of treatment applied to the eligible patient population. Data on the number of eligible patients were estimated from the published literature and local experts, while the projected uptake of liposomal irinotecan was provided by Servier. Drug acquisition costs were considered in the analysis and were retrieved from the Greek Ministry of Health. The model measured outcome was incremental budget impact from the introduction of liposomal irinotecan as a treatment option for patients with mPDAC who have previously received gemcitabine-based regimens in Greek health system.
relapse (1st month after relapse) \(20,877\), pre SCT (1st month before the operation) \(37,400\), post SCT (2 years after the operation) \(37,044\) and one month before death \(10,200\). The cost of treatments of first year of relapse was \(102,272,724\). The analysis indicated that the treatment duration for which the costs are reported varies between the different disease stages.

**PCN156**
**ESTIMATING THE ECONOMIC AND HEALTH IMPACT OF THE PD-1/PD-L1 INHIBITOR CLASS IN BULGARIA**

**Dimirova M,1 Todorov S,1 Dzhambazov S,2 Slavchev G,2 Swales O,1 Hughes R,1 Nagda N,1 Luchereni S,1**

1MedS Bulgaria, Sofia, Bulgaria, 2HTA Ltd., Sofia, 23, Bulgaria, 3Adelphi Values Ltd, Bollington, UK

**Objectives:** Immunotherapy treatments have transformed cancer care, offering improved outcomes in a range of indications, greater quality of life, survival benefits and regimen tolerability, and have marked improved treatment efficacy. The rapid expansion of immunology- (IO) treatment options and their use may potentially put healthcare budgets under strain. The objective of this study is to describe an approach developed to inform decision makers and payers of the potential health outcomes and economic impact of PD-1/PD-L1 inhibitors. **Methods:** Budget impact analysis and partitioned survival modelling were used to estimate key clinical and economic outcomes in a world model with and without PD-1/PD-L1 inhibitors in 11 oncology indications: adenocarcinoma and metastatic melanoma, first- and second-line non-small cell lung cancer, metastatic renal cell kidney cancer, breast cancer, uterine, renal cell carcinoma, first- and second-line head and neck squamous cell carcinoma, small cell lung cancer and gastric cancer. Outcome were estimated over a five-year time horizon (2019–2023). Drug acquisition costs and market share assumptions were based on publicly available information, while efficacy and adverse events data were taken from the clinical trials. Indirect costs were also included in the model. **Results:** In 2019, it was estimated that 22.2% (BCG 88 million) of Bulgarian expenditure on cancer medicines was attributable to PD-1/PD-L1 inhibitors. The average annual economic impact of PD-1/PD-L1 inhibitors is estimated to be BGN 179 million over five years. For this investment, 1,711 additional life years, 1,546 progression-free life years and 1,429 quality-adjusted life years are expected to be gained over five years by using PD-1/PD-L1 inhibitors in Bulgaria. A reduction of 626 high-grade adverse events is also expected. **Conclusions:** PD-1/PD-L1 inhibitors can deliver significant survival benefits in cancer patients, with less severe side effects. The budgetary ramifications for Bulgaria are manageable but increasing usage of PD-1/PD-L1 inhibitors will require additional budget planning.

**PCN158**
**CONSIDERATIONS AND CHALLENGES FOR ECONOMIC MODELING IN NON-METASTATIC NON-SMALL CELL LUNG CANCER (NMNSCLC)**

**Miilay S,1 Harris M,3 Quinlan P,1 Vo L,1 McKenna M,1 Sun A,2 Chaudhary MA,1 Penrod JR,1 Sorensen S,1**

1Evidera, San Francisco, CA, USA, 2Evidera, Bethesda, MD, USA, 3Bristol-Myers Squibb, Lawrenceville, NJ, USA, 4Health Outcomes Solutions Ltd, London, UK

**Objectives:** Recent regulatory approvals in neoadjuvant non-metastatic cancer treatment have been contingent on early endpoints (e.g., event-free survival [EFS] or pathological complete response [pCR]), but an estimate of overall survival (OS) benefit is required for a health technology assessment model. The objective of this study was to understand challenges in estimating the cost-effectiveness of therapies in non-metastatic cancer using partitioned survival analysis (partSA) and Markov approaches. **Methods:** Neoadjuvant treatment of nmNSCLC was selected as the case study. A targeted literature review revealed no prior cost-effectiveness analyses in this indication. Thus, we developed a de novo model that could estimate the long-term survival outcomes of patients with nmNSCLC using two approaches: three-state partSA and Markov state-transition (health states: EFS, locoregional recurrence [LR], post-recurrence remission, distant metastasis [DM], and death). In both approaches, EFS was stratified by pCR, and inputs were informed by published data evaluating neoadjuvant platinum-doublet chemotherapy. Mortality rates are lower in non-metastatic vs. metastatic cancer; multiple prognostic factors and subsequent treatments should be considered. **Results:** Both approaches produced similar undiscounted estimates (148 years) but different OS benefits (Markov: -2.32 life years [LY]; partSA: 3.42 LYs) over a lifetime time horizon. Predicted 5-year OS was similar in both models (Markov: 17%; partSA: 19%). Data required to inform the Markov post-progression phase are sparse and from heterogeneous populations. PartSA approach produces greater uncertainty due to structural inability to explicitly model the post-progression pathway. Model results are sensitive to selected parameter distribution to extrapolate EFS, the appropriateness of the literature informing the model, and the impact of the extent of progression (e.g., LR vs. DM).

**Conclusions:** Both modeling approaches face challenges. The Markov approach better articulates the post-progression setting but suffers from a lack of complete data; conversely, the PartSA approach is less data-driven, but the results are subject to uncertainty.

**PCN159**
**THE ECONOMIC ANALYSIS OF SOCIAL SECURITY COSTS: CANCER-RELATED IN ITALY**

**Nardone C,1 Trabucco Aurilio M,1 Sciannamea V,1 Migliorini R,1 Meninii FS**

1CEIS - Centre for Economic and International Studies, Faculty of Economics, University of Rome, Tor Vergata, Rome, RM, Italy, 2University of Molise, Campobasso, Italy, 3Italian National Social Security Institute (INPS), Rome, Italy, 4Economic Evaluation and HTA (EETHA CEIS), Department of Economics and Finance, Faculty of Economics, University of Rome “Tor Vergata”, Rome, Italy.

**Objectives:** In Italy, more than 21,000 workers lost their ability to work because of a cancer. The aim of this study is to estimate the cancer economic impact on the Social Security System in Italy, during the last years. **Methods:** The economic analysis is focused on two types of social security benefits: Disability Benefit (DB), for workers with reduced workability, and Incapacity Pension (IP) for workers without workability. Data are derived from the database of disability insurance awards of the Italian National Institute of Social Security (INPS). Considering the period between 2011 and 2017, only cancer cases and related amount of costs due to cancer. Probabilistic Sensitivity Analysis and Deterministic Sensitivity analysis were performed in order to test the robustness of the estimation. **Results:** Estimates are ongoing, but preliminary results show a significative economic burden on the social security system due to cancer: about € 2 billion every year. Moreover, there is an upward trend in Disability Benefit beneficiaries (+ 21% in 2019, compared to 2014) and, at the same time, a decline in Incapacity Pension beneficiaries (-20%). **Conclusions:** This study is the first attempt to estimate the overall social costs induced by cancer in Italy. The disability insurance costs caused by cancers have a significative and constantly increasing impact on the Italian Social Security System. Exploring what is hidden in these dynamics and ensuring a more rapid access to innovative treatments could reduce these costs (accompanied by increase in QoL), through the reduction of people requesting a Social Security benefit to INPS.

**PCN161**
**DISEASE BURDEN OF MULTIPLE MYELOMA (MM) IN FRANCE: A DESCRIPTIVE STUDY BASED ON A FRENCH MEDICO-ADMINISTRATIVE DATABASE**

**Vimont A,1 Bocoboza H,1 Blacher M,1 Leleu H,1**

1Public Health Expertise, Paris, France, 2Public Health Expertise, Paris, France

**Objectives:** Multiple Myeloma (MM) is a malignant hemopathy. The disease is identified by a severe proliferation of plasma cell in bone marrow for which there is still a lack of economic evidence. The objective of this study is to estimate the MM burden disease in the French setting. **Methods:** The EGB (Echantillon Généraliste de Bénéficiaires) database, a 1/97th random sample of the French healthcare insurance database linked with the hospital discharge database (PMSI) was used for this study. Retrospective data between 2014 and 2017 were considered to identify incident cases of MM. The index admission was the first admission with principal diagnosis (ICD-10: C90) and patients had to be clear of MM admission in the 5 previous years. Healthcare costs were analyzed from the national health insurance perspective. The study period included the first-year period following the initial diagnosis, and the second-year period following the initial diagnosis. Additional costs attributable to the disease were estimated by comparing the incident CL cohort to a matched cohort, on age and gender, with a 1:5 ratio. **Results:** The study identified 150 incident cases with a mean age of 73 years (SD: 11), 47% were women, 16% had severe comorbidities (Charison index ³3) and 33 deaths (22%) were observed during the study period. Monthly additional cost during the first-year period was estimated at €5,259. Main drivers of costs were admissions (€2,478) and pharmaceuticals (€2,366) and 28 patients (19%) had transplantation (autograft or allograft). **Conclusions:** The disease burden of MM is significant. This study confirms the significant economic burden of MM in France and provide up-to-date economic data that could support decision making.

**PCN162**
**DISEASE BURDEN OF CASTRATION-RESISTANT PROSTATE CANCER (CRPC) IN CHINA**

**Ma FF,1 Liu Q,1 Wang L,1 Zhang XJ,1 Yu F**

1Beijing North Medical & Health Economic Research Center, Beijing, China, 2Xian Janssen Pharmaceutical Ltd., Beijing, China

**Objectives:** In China and even in the Asia Pacific region, study quantified the disease burden of MM-CRPC is lacking. This study aims to evaluate the disease burden (including epidemiology, survival, direct and indirect cost) of CRPC patients (including NN-CRPC and mCRPC) from the society perspective. **Methods:** First of all, to design the questionnaire, a systematic literature review on the CRPC's