nosed or for first relapse of AML or MDS. IFI subjects had been diagnosed with proven or probable IFI according to EORTC criteria and received antifungal therapy. Match criteria were duration of febrile neutropenia, age and type of chemotherapy. Resource utilization data included length of stay, mechanical ventilation, parenteral nutrition, diagnostic procedures, antifungal agents and cost-intensive concomitant medication. Direct medical cost was calculated from the hospital provider perspective. **RESULTS:** A total of 108 patients were enrolled at 5 maximum care hospitals, 36 IFI patients and 72 controls. Mean age was 61.5 years (IFI group) and 61.2 years (control group), 50% and 63% were male, respectively. Primary diagnosis was AML in 97% of IFI patients and in 99% of control patients. The vast majority of IFI patients (74%) had invasive aspergillosis. IFI patients stayed on average 12 days longer in the hospital than control patients. In the IFI group all patients (100%) and in the control group 89% of patients received antifungal drugs. Mean direct cost per patient amounted to €51,517 in the IFI group and €30,454 in the control group. Incremental cost of €21,063 was dominated by cost for antifungal drugs (36%), hospital stay (32%) and blood products (23%). **CONCLUSIONS:** The economic burden of IFI in patients with AML or MDS is remarkable from the perspective of hospitals in Germany. Therefore, antifungal prophylaxis in patients with AML or MDS should be considered because of clinical and economic reasons.

PCN62

ECONOMIC BURDEN OF TOXICITIES ASSOCIATED WITH SALVAGE TREATMENT IN ADVANCED AND METASTATIC BREAST CANCER

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OBJECTIVES: Treatment regimens in extensively pre-treated advanced and metastatic breast cancer (MBC) patients may confer similar efficacy but have different toxicity profiles. This study aimed to identify toxicities associated with chemotherapy regimens in late-line breast cancer and to estimate direct costs of managing those toxicities. **METHODS:** A PubMed search identified global Phase II/III studies of single agent and combination treatment regimens for advanced and MBC patients previously treated with ≥2 chemotherapy regimens. The proportion of patients experiencing grade 3 and 4 toxicities was abstracted. Using expert opinion, reported toxicities were placed into representative groupings based on similarities in event types and treatment costs (e.g., extremity pain, pain, arthralgia, headache) and a proxy for each grouping (e.g., pain) was identified for purposes of estimating direct costs of treatment for grade 3 and grade 4 (inpatient) toxicities. Unit costs were estimated using data from Health Care Utilization Project, Medicare reimbursement rates, and Redbook and updated to 2008 USD using the medical care component of the Consumer Price Index. **RESULTS:** This study included toxicity information from seven treatment regimens studied in the salvage setting. The most commonly reported grade 3 toxicities were hematological (albumin-bound paclitaxel, capecitabine, gemcitabine, ixabepilone + capecitabine), cardiac (bevacizumab + capecitabine), fatigue (ixabepilone), and gastrointestinal-related (sunitinib). The most commonly reported grade 4 toxicities were hematological (albumin-bound paclitaxel, capecitabine, ixabepilone, ixabepilone + capecitabine), embolic (bevacizumab + capecitabine) and anemia-related (capecitabine, gemcitabine). Estimated total direct costs of treating all toxicities by treatment regimen were: sunitinib ($107), gemcitabine ($585), albumin-bound paclitaxel ($1446), bevacizumab + capecitabine ($3493), capecitabine ($3775), ixabepilone ($4403), and ixabepilone + capecitabine ($16279). **CONCLUSIONS:** Treatment regimens in extensively pre-treated breast cancer patients may have similar efficacy but vary greatly in the cost of managing treatment-related toxicities: $107 to $16279 in this study. The costs of these toxicities should be included in future economic evaluations comparing the clinical and cost-effectiveness of alternative treatment regimens for advanced and MBC.

PCN63

METASTATIC COLORECTAL CANCER: MEDICAL COSTS OF FIRST LINE INFUSIONAL 5-FLUOROURACIL OR ORAL CAPECITABINE IN ITALIAN PATIENTS

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OBJECTIVES: To estimate the costs of infusional 5-fluorouracil (5-FU) and oral capecitabine (CAP) in Metastatic Colorectal Cancer (MCC) patients. **METHODS:** Observational, retrospective study estimating direct medical costs (medications, administration patterns, infusion device insertion, tests, visits, adverse event management) after treatment with first-line 5-FU or CAP, with or w/o association of other chemotherapies. Data were collected from patients' charts in 5 Oncology ambulatories. Average per patient direct cost was estimated by national tariffs and market retail prices (2007 values) in the Italian Healthcare Service (IHCS) perspective. **RESULTS:** Data were collected on 202 subjects (136 on 5-FU; 66 on CAP). A total of 93% 5-FU-patients and 47% CAP-patients received infusional chemotherapy agents in association. Alternatives differed in the mean number of cycles planned (5-FU 10.7 vs CAP 6.7) and administered (5-FU 9.7 vs CAP 6.4). In the IHCS perspective, average total cost was €12,029 (SD €5,521) per 5-FU-patient vs. €5,781 (SD €4,933) per CAP-patient; considering only patients in combination regimens mean total cost per patient were €12,534 in 5-FU plus oxaliplatin or irinotecan and €9,986 in CAP plus oxaliplatin or irinotecan. Administration of infusional therapy in Day Hospital (DH) accounted for 51% and 28% of total costs in 5-FU and CAP group, respectively; drug cost amounted to 37% in 5-FU and 60% CAP arm. Arms differed as to catheter insertion, adverse event management and chemo-supportive therapy costs. Oral route remained the most economic alternative over the infusional route in all sensitivity analyses. **CONCLUSIONS:** Management of MCC patients by oral chemotherapies may be economically rational to IHCS.

PCN64

SHIFT OF PUBLIC HEALTH CARE EXPENDITURES FOR PALLIATIVE CANCER PATIENTS FROM INPATIENT TO OUTPATIENT EFFECTED BY HOME CARE SUPPORT TEAMS PROVIDED BY A UNIVERSITY HOSPITAL IN AUSTRIA

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OBJECTIVES: To quantify the financial impact of home care support teams versus inpatient palliative care in a university

hospital in Austria for the last two months of life of cancer patients. **METHODS:**Two groups of cancer patients, who had at least one stay in the inpatient palliative care unit, were formed retrospectively. All patients died in 2005 or 2006. Patients in the control group "no home care support team—NHCST" only got inpatient care. Patients in the intervention group "home care support teams—HCST" got additional home care support. Patients of NHCST and HCST were matched by age, sex and main diagnosis to ensure that patients in both groups were comparable (N = 60 for each group). Only public health care expenditures were considered. Data comprised of the Minimum Basic Data Set from all public hospitals in Styria and the follow-up costs dataset from the largest compulsory health insurance institution of Styria. Health care expenditures were allocated to costs for inpatient care, costs for outpatient care (general medicine, specialized medicine, drugs, assistive technology, costs of transport), and costs of home care support teams. Finally, health care expenditures of the last two months of life were compared for both groups. **RESULTS:** Mean costs for inpatient care of NHCST/HCST are €7502/€5843 (€1659/22.1% /p = 0.035). Mean costs for outpatient care of NHCST/HCST are €1106/€1391 (€ + 285 / + 25.8% / p = 0.063). The mean costs for home care support teams are €1290 for HCST group. Total health care costs are almost the same for both groups (HCST: €8524 vs. NHCST: €8608 /€ + 84 / + 1% / p = 0.988). **CONCLUSIONS:** HCST shows tendency of being self-financing due to savings of inpatient care for the last two months of life of cancer patients.

PCN65

A PHARMACOECONOMIC MODEL FOR THE MANAGEMENT OF CANCER PAIN: OPIOID MARKET WITH OR WITHOUT OROS HYDROMORPHINE IN TURKEY

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OBJECTIVES: Opioids comprise the main option in the management of moderate-to-severe cancer pain. Different opioids are used in rotation to eliminate tolerance and opioid side effects that limit increasing dose. Since there are only two non-parenteral opioids—morphine and fentanyl—in Turkey, pain control with rotation might not be successfully done and invasive treatment modalities are to be selected much earlier than optimal. The aim of the study is to evaluate the contribution of the addition of a new long-acting oral opioid (OROS hydromorphone) into the current opioid market, with regard to the cost of treatment in moderate-to-severe cancer pain. **METHODS:** Model: Decision tree modeling to compare the current two-opioid-market with the hypothetical three-opioid-market, is used in the calculation of costs. Patients are treated with rotation of two and three opioids in the current and hypothetical market respectively. Time horizon is eight weeks. The study has been performed from the health care payer perspective. Data sources: The clinical data are acquired from the literature. Prices of medications, discount rates, other costs related to the treatment are obtained from Ministry of Health Drug Price List, Price List of Social Security Institution Health Implementation Guideline Appendix 2/D and 8, respectively. Analysis: Direct medical costs that are considered are the costs of opioids, invasive treatment modalities, side effects, physician visits and hospitalization. Because time horizon is shorter than 1 year, costs are not discounted. The results are presented as total costs of alternatives. **RESULTS:** Costs of treatment are calculated as €1528/patient for the current two-opioid-market and €1070€/patient for hypothetical three-opioid-market. The amount of saving is €458/patient. **CONCLUSIONS:** Inclusion of OROS hydromorphine into the Turkish market will both increase the chance of patients be treated with non-parenteral opioids without need to non-invasive methods and also provide saving in the total medical costs of treatment.

PCN66

HOW COSTLY IS RADIOTHERAPY WITH PARTICLES? COST ANALYSIS OF EXTERNAL BEAM RADIOTHERAPY WITH CARBON IONS, PROTONS AND CONVENTIONAL PHOTONS

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OBJECTIVES: Particle therapy (PT) with protons or carbon-ions appears more effective in cancer treatment than conventional treatment with photons. The investment costs are however much higher. For a reliable estimate of the cost-effectiveness of particle therapy an objective cost estimate is crucial. Therefore, an extensive cost analysis was performed for each facility. **METHODS:** An analytical framework with all relevant parameters based on literature review and expert opinion was built in Excel. Costs were calculated for: (A) combined carbon-ion and proton facility (B) proton-facility, (C) photon-facility. The total costs per year were calculated as the sum of the capital costs divided by the life cycle of the facility (30 years) and the running costs per year. The cost per fraction was calculated as total costs per year divided by number of fractions per year. The number of fractions per year was calculated in an operational model. **RESULTS:** The capital costs per facility are: (A) €138.6 m, (B) €94.9 m, (C) €23,4 m. The annual running costs are: (A) €21 m, (B) €14.2 m (C) 6,9 m. The costs per fraction per facility are: (A) €787, (B) €516, (C) €187. The cost ratio is 4.2 for the combined-facility vs photon-facility and 2.8 for the proton-facility vs photon-facility. The incremental costs are €600 and €329 per fraction, respectively. The costs per fraction for (C) increased to 543€ when special treatment category tumors only were included. A ±20% variation in the annual number of fractions, capital costs and running costs, resulted in changes in the cost per fraction from –17% to +25%. The number of fractions caused the biggest change, the capital costs the smallest. **CONCLUSIONS:** A combined carbon-ion/proton facility is the most costly facility, followed by a proton facility. The outcomes are most sensitive for the patient throughput, patient mix, and average time per fraction.

PCN67

COST UTILITY ANALYSIS OF ALEMTUZUMAB COMPARED TO CHLORAMBUCIL IN UNTREATED PATIENTS WITH HIGH-RISK (17P-) CHRONIC LYMPHOCYTIC LEUKEMIA IN THE UNITED KINGDOM

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OBJECTIVES: To compare costs and outcomes of alemtuzumab and chlorambucil as first line treatment for patients with **high-risk (17p-)** chronic lymphocytic leukemia (CLL) in the UK. **METHODS:** A lifetime Markov model was developed. Patients were modeled receiving treatment and moving through post-treatment response and progressive disease. Three possible lines of chemotherapy were considered, followed by final disease progression and death. Patients had CLL, were chemotherapy naïve and exhibited deletion of the chromosome 17p, a defect associated with poor prognosis and failure to respond to other CLL therapies. Response rate and duration at first line were taken from a recent randomized study, the CAM307 trial, for subsequent lines