EANMS had a substantial impact on the results of health economic evaluations.

**PCN22**

**COSTS OF COMMON TREATMENT OPTIONS FOR INDOLENT FOLLICULAR NON-HODGKIN’S LYMPHOMA**

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**OBJECTIVES:** Follicular non-Hodgkin’s lymphoma (FL) is the most common indolent lymphoma occurring in the Western Hemisphere with a variable clinical course. Because of high costs of new treatments, we assessed direct health care costs associated with the most commonly prescribed treatments for FL.

**METHODS:** New and previously diagnosed FL patients (≥18 years) known during 1997–1998 to 15 Dutch hospitals were randomly selected for inclusion. Each patient was followed for three years, from a distinct event in the disease course onwards, for resource use associated with each of the treatments, including ’watchful waiting’. The hospital perspective was adopted. Unit resource use associated with each of the treatments, including antimicrobials, perfusions, lab tests, interventions and other drugs was multiplied with unit costs from official sources. Regression analysis to identify cost drivers was performed on the 3-year data collection period (25%) was not treated because of a watchful waiting strategy (10%) or complete remission (15%). Allogeneic and autologous stem cell transplantations were the most expensive treatments, with a mean per patient cost of €45,326 (n = 7) and €18,866 (n = 9) respectively (up to discharge only). This was followed by fludarabine i.v. €10,651 (n = 33), rituximab (€10,628; n = 7); and CHOP €7,547 (n = 42). Classical FL treatments were found to be the least expensive treatments used with an estimated cost for CVP of €5268 (n = 58), for radiotherapy of €4,218 (n = 52), and for chlorambucil €2,476 (n = 53). CONCLUSIONS: This study presents detailed information on resource use and costs associated with the most commonly prescribed FL treatments. In addition to differences in effectiveness, commonly used treatments vary considerably in terms of resource use and overall cost. This information is of value for resource planning.

**PCN23**

**ECONOMIC ASPECTS AND DRIVERS OF FEBRILE NEUTROPENIA IN CANCER—A MULTICENTRE RETROSPECTIVE ANALYSIS IN BELGIUM**

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**OBJECTIVES:** To determine costs and identify cost drivers for febrile neutropenia (FNE) in Belgium. **METHODS:** Direct costs of FNE to health care payers were calculated from retro–projected chart review of patients treated during 2003 in 4 centres (n = 93, 4 Hodgkin’s disease (HD), 36 Non–Hodgkin lymphoma (NHL), 10 multiple myeloma, 35 breast cancer (BRCA) and 8 small–cell lung cancer). Clinical data and FNE related resource utilization were collected from patient files. Cost data included all FNE related costs. Resource use (including hospitalisation, antimicrobials, perfusions, lab tests, interventions and other drugs) was multiplied with unit costs from official sources. Regression analysis to identify cost drivers was performed on log–transformed costs using a mixed linear model. **RESULTS:** The average number of FNE’s in patients with FNE was 1.3, the first FNE occurring after 1.7 cycles. The average number of FNE’s tended to be higher in patients with hematological malignancies and in patients receiving combination chemotherapy. The mean cost per FNE episode, excluding G–CSF treatment and secondary prevention, was €4,221 (95% CI:3,521–4,921). Major cost components were hospitalization (€2,707), antimicrobial therapy (€784) and tests (€636). Growth factors were prescribed for FNE treatment and secondary prevention in 84% and 51% of patients respectively. The average total cost of growth factors was €2,197. Mortality during chemotherapy was 11%. Regression analysis showed that underlying disease and survival were independent cost drivers. NHL patients incurred 1.85 times higher costs than others (95% CI:1.07–3.20, p = 0.0316). Patients who died, either from FNE or from their underlying disease, showed 1.52 times higher costs (95% CI:1.04–2.22, p = 0.0347) than survivors. Co–existence of thrombocytopenia or anemia also significantly predicted higher FNE costs. **CONCLUSION:** The cost of FNE varied according to underlying disease. NHL patients showed the most elevated total FNE related costs. These analyses of cost drivers enable to fine–tune data for economic analyses to relevant patient subgroup.

**PCN24**

**ESTIMATING THE COST OF INFORMAL CARE GIVING IN LUNG CANCER PATIENTS. THE HABIT STUDY**

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**OBJECTIVES:** To estimate cost associated with informal care giving in advanced stage Non–Small Cell Lung Cancer (NSCLC) patients, identifying the costs drivers in Italy; to measure symptoms evolution using the LCS subscale of the FACT-L questionnaire. **METHODS:** A total of 104 patients (55 on second line chemotherapy and 49 in supportive care) were enrolled in 18 Italian oncology departments and followed up for 3 months. Main caregiver workload was assessed monthly by evaluating the number of hours devoted to ten care giving tasks, presence and activities of other informal or formal caregiver were registered, performance status was evaluated monthly by means of the ECOG scale. Patients completed the LCS symptoms subscale for each visit. Formal care giving time was valued according to market prices; informal care giving hours were valued using the wage rate for an equivalent service. The covariance analysis was performed to check for influential factors in assistance need and costs. **RESULTS:** During the 3-month observational period both ECOG and LCS scores depreciated in the two groups. An equal number of deaths were registered among patients in chemotherapy and in supportive care. Monthly hours of informal care giving increased from 124.37 to 166.9 for the chemotherapy patients and from 141.92 to 150.97 for supportive care patients. The whole home assistance cost accounted for €3,159 for chemotherapy and €4,189 for supportive care patient. The regression analysis highlighted that symptom depreciation is a driver of care giving time and costs and that the assistance cost increases if the caregiver doesn’t live with the patient. **CONCLUSIONS:** The burden of assistance in NSCLC advanced patients is mainly beared by family members who provide also home health aide. As the population ages and family structure is changing, social intervention targeted at unpaid family caregiver will be needed to ease the economic, psychological and physical burden of care giving.

**PCN25**

**INFLUENCE OF THE PORTION OF MEDICAL EXPENSE PAID INDIVIDUALLY ON PHYSICIANS’ ATTITUDE TOWARDS CANCER TREATMENT IN JAPAN**

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OBJECTIVES: To investigate the influence of the portion of medical expense (30% of total amount of medical cost) paid individually on physicians’ attitude toward treatment for the patients with breast cancer in Japan. METHODS: A total of 165 physicians from board members of Japanese breast cancer society (363 physicians) completed self-report questionnaires. RESULTS: One hundred and forty-two out of 165 physicians (87.7%) were surgeons, which reflected peculiar circumstance; surgeons usually are involved in surgical treatment as well as chemotherapy in Japan. Seventy-seven physicians (48%) had an experience of having been asked by the patient for cheaper treatment because of excessive individual payment. One hundred and twenty physicists (74%) tried to select the treatment, giving greater importance on the cost individually paid by the patients. The difference between actual cost and the cost roughly estimated by the physicians was the greatest in the treatment using molecular targeting drugs (i.e., trastuzumab) and was smaller in hormone therapy as well as conventional chemotherapy. The rate of physicians unfamiliar with following national medical/welfare system in Japan was “refunding from social assuror” (12%), “interest free-loan by local government” (46%) and “tax reduction for medical expenses” (21%). The physicians supporting expansion of the portion of the medical expense uncovered by social insurance was three times greater than those negative for it. CONCLUSION: 1) About 60 percent of breast cancer specialists had keen senses on an economical side of the treatment especially on the portion of medical expense paid individually. 2) Excessive individual payment exerted an influence on continuing effective chemotherapy.

PCN26

CUTANEOUS CANCER TREATMENT AND COSTS IN GERMANY

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OBJECTIVES: Cutaneous cancer is a general term given to a range of skin tumours. Its severity is determined by the size and location of the primary tumour, and whether there are metastases. This study was designed to obtain a clear understanding of the current treatments and costs related to the clinical management of cutaneous cancer in Germany. This study was undertaken to be able to contrast the efficacy and health economic benefits of current care relative to emerging ablational technologies being developed. METHODS: A Care Map was developed to capture how patients with cutaneous cancer are treated in Germany from diagnosis through follow up. In this study, the focus was on treatment of tumours not larger than 20 cm². Information in the public domain was supplemented with information gathered through expert interviews with six dermatologists.

RESULTS: After diagnosis of cutaneous cancer, patients were mainly treated with Mohs surgery (32%), conventional surgery (30%), chemotherapy (14%) and radiotherapy (12%). Other treatments used include limb perfusion, phototherapy (e.g., PUVA), laser therapy, immunotherapy or combinations of these therapies. After first line treatment, more than 85% of patients are cleared of their cancer and are subsequently followed for recurrence of the tumour. Recurrent tumours are mainly treated with Mohs surgery (31%), conventional surgery (25%), or chemotherapy (22%). Severe adverse events are rare. The total average charge to the third party payer of first-line treatment is approximately €3540. For the second-line treatment the costs are approximately €3756.

CONCLUSIONS: Current treatment of small cutaneous cancers varies depending upon the type of tumour. Mohs surgery, conventional surgery, chemotherapy and radiotherapy are the main treatment options. First line treatment is very successful, with 85% of patients being cured. However, the 15% of patients with recurrences will need to undergo a second-line treatment, impacting the patient and health care system.

PCN27

ECONOMIC ANALYSIS OF BISPHOSPHONATES FROM THE PAYERS PERSPECTIVE IN BRAZIL

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OBJECTIVES: To evaluate the incidence of skeletal-related events (SREs) in cancer patients with bone metastasis, their incremental direct costs and measure the potential economic value of the use of bisphosphonates. METHODS: A retrospective analysis of medical provider’s bills from 3.219 cancer patients (breast, prostate, lung, renal, multiple myeloma) for 24 private health care plans in Brazil was constructed and analyzed from the private payers’ perspective. Patient population was divided into two groups: placebo (2.431 patients with no use of bisphosphonate) and bisphosphonate (787 patients treated with Zometa®/Aredia®, Ostac®/Bonefos®). The total health care utilization cost per patient per year was calculated as the sum of the average pharmaceutical cost (bisphosphonate cost plus the cost of infusion, outpatient day hospital, materials and other prescription drugs) and the average cost per patient in treating a SRE, considering the real incidence for each bisphosphonate. SREs were defined as pathological bone fracture, spinal cord compression, radiation therapy to bone, and surgery to bone. RESULTS: The incidence of clinical and surgical SREs was: Zometa® (15%; 1%), Aredia® (19%; 2%), Ostac®/Bonefos® (26%; 13%), placebo (37%; 5%). The cost per patient in treating a clinical SRE, in USD, ranged from $58 to $2744. The cost per patient in treating a surgical SRE ranged from $610 to $21,250 (patient who required surgery to bone). The average cost per patient in treating a clinical SRE was $480 and in treating a surgical SRE was $5445. The total health care utilization cost per patient per year was the lowest for Zometa® ($2106) followed by Aredia® ($2375), Ostac®/Bonefos® ($2818) and placebo ($2637).

CONCLUSION: Among the bisphosphonates analyzed, Zometa® showed to be effective at preventing the skeletal-related events with the lowest total health care utilization cost.

PCN28

DOCUMENTATION OF PHARMACY COST IN THE PREPARATION OF CHEMOTHERAPY INFUSIONS IN ACADEMIC AND COMMUNITY-BASED ONCOLOGY PRACTICES

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OBJECTIVES: Significant changes in Medicare reimbursement for outpatient oncology services are included as part of the Medicare Modernization Act of 2003. The objective of this study was to identify the “true cost” associated with the drug-related handling for the preparation and delivery of chemotherapy doses. METHODS: Two academic medical outpatient infusion centers (Universities of Utah and Wisconsin) and two community cancer centers in the U.S. (Fairfax, Virginia and Montgomery, Alabama) provided data used to estimate all “fixed costs” associated with the preparation of chemotherapy including drug storage, space, insurance management, inventory and waste management, pharmacy staff payroll, equipment, supplies, information resources and shipping. These costs were annualized and then divided by the number of chemotherapy doses given at each site per year. A Time-and-Motion study was also performed.