trastuzumab (11 703 935 €), rituximab (9 153 856 €); in terms of DID: ifosfamid (3,43 (2004) and 6,3 (2009)), gemcitabine (4,88 (2004) and 4,66 (2009)), fluorouracil (3,14 (2004) and 2,85 (2009)). **CONCLUSIONS:** Financial expenditures for antineoplastic agents are rising due to use of new and expensive medications, which are supposed to double within coming years and are expected to decrease one third of cancer mortality. Senescent population with higner incidence of cancer disease is expected to slightly increase DID and medicine packages consumption.

### PCN74
UTILISATION OF DRUGS INVOLVED IN TREATMENT OF STAGE I AND STAGE II BREAST CANCER IN SLOVAK REPUBLIC

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**OBJECTIVES:** Breast cancer forms in tissues of the breast, usually in ducts and lobules. It is the most common type of woman's cancer in Slovakia (age- standardized rate- 48, incidence rate - 2016 new cases every year, mortality rate 773 deaths annually ). The aim of this study was to provide comparable and reliable data of utilisation of stage I (invasive, up to 2 centimeters, no lymph nodes involved) and stage II (invasive, 2-5 centimeters, lymph nodes might be involved, over 5 centimeters- no lymph nodes involvement) breast cancer drugs within the period 2004-2009. **METHODS:** Analysed data were abstracted from Slovak Institute for Drug Control, which collects them from wholesalers. Data were studied in accordance with Daily Defined Dose (DDD, with exception of trastuzumab) and in financial units (€). **RESULTS:** The consumption of drugs used in stage I and II breast cancer had increasing trend in terms of financial burdens between 2004 and 2009 with anastrozole ( from 1 378 317 € to 1 888 478 €),, doxorubicine (from 776 400 € to 1 354 072 €), methotrexate ( from 138 954 € to 650 993 €) and trastuzumab (from 359 797 € to 11 703 935 €) decreasing trend with tamoxifen ( from 261 417 € to 159 064 €) nad alternating trend with cyclofosfamide ( 206 156 € (2004), 223 867 € (2006), 207 042 € (2009)), epirubicine ( 238 125 € (2004), 908 690 € (2007), 629 757 € (2009)) and fluorouracil ( 444 627 € (2004), 455 578 € (2006), 339 232 € (2009)). Highest consumption in terms of DDD showed fluorouracil (3,24 DID (DDD/1000 inhabitants/day) in 2006, 2007, 2008) and highest increase of DDD anastrazole ( 0,14 DID (2004), 0,46 DID (2009)). **CONCLUSIONS:** Optimal treatment of breast cancer requires different therapies. Trastuzumab is well established on Slovak market due to good reasults in early stage treatment with few recidives. Consumption of tamoxifen and anastrozole will be influenced by exemestane.

### PCN75
ECONOMIC EVALUATION OF DASATINIB IN CHRONIC MYELOGENOUS LEUKAEMIA PATIENTS RESISTANT TO IMATINIB IN PERU, COMPARED TO NILOTINIB AND HIGH DOSES OF IMATINIB

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**OBJECTIVES:** Within the framework of Chronic Myelogenous Leukaemia (CML) treatment in Peru, and based on a previously performed economic evaluation, we compared the costs and cost-effectiveness ratio of using 100mg/day and 140 mg/day doses of Dasatinib with the use of 800 mg/day doses of Nilotinib or an increased dose of Imatinib (800mg/day), for each phase of the disease, in patients who developed resistance to habitual doses of Imatinib. **METHODS:** A Markov model was used for this economic evaluation, which considered a cohort of 10.000 CML patients in its three phases (chronic, accelerated and blast phase), a lifetime horizon and a 3.5 % discount rate for costs and benefits. Model results included the costs of each treatment alternative with Dasatinib, Nilotinib or Imatinib, and Quality Adjusted Life Years (QALYs) gained. Costs were measured in Peruvian SOLES of year 2010. **RESULTS:** In the chronic phase of the disease, dasatinib 100 mg/day yielded the highest amount of QALYs with 6,62 and the lowest cost-effectiveness ratio. In the accelerated phase, Dasatinib 140 mg/day also showed the lowest cost-effectiveness compared to Nilotinib and Imatinib. In the blast phase, dasatinib showed lower cost-effectiveness ratio than imatinib. **CONCLUSIONS:** Dasatinib 100 mg/day showed the lowest cost-effectiveness ratios than doses of 800 mg/day of Nilotinib and imatinib 800 mg for the treatment of patients with CML resistant to usual imatinib doses in the chronic phase, as well as in the accelerated and blast phases. Although there was an overall cost increase, especially due to the cost of Dasatinib in 140 mg/day doses, this fact was explained by the increase in life years gained and, consequently, the use of medical resources and drugs.

### PCN76
SKELETAL-RELATED EVENTS IN PATIENTS WITH BONE METASTASES LEAD TO CONSIDERABLE HEALTH RESOURCE UTILISATION IN EUROPE: ANALYSIS OF A MULTINATIONAL OBSERVATIONAL STUDY

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**OBJECTIVES:** To determine the burden of bone metastases and health resource utilisation (HRU) associated with skeletal-related events (SREs) in patients with advanced cancer. **METHODS:** This observational study assessed HRU associated with SREs (defined as spinal cord compression [SCC], surgery to bone [SB], pathologic fracture [PF] or radiation to bone [RB]). Patients with breast, lung or prostate cancer metastatic to bone or multiple myeloma and life expectancy >6 months were enrolled in centres in Germany, Italy, Spain, UK, Canada and USA after experiencing a SRE. We report here the European HRU data on hospitalisation, which were collected retrospectively for the 90 days prior to enrolment and prospectively

for approximately 18-21 months. **RESULTS:** 631 eligible patients with a total of 1282 SREs were enrolled across 95 European sites: 223 (35.3%) had a primary diagnosis of breast cancer, 135 (21.4%) lung cancer, 120 (19%) prostate cancer and 153 (24.3%) multiple myeloma. Across all tumour types, for Germany, Italy, Spain and UK, respectively, the mean number of hospitalisations per SCC (n = 91) was 0.85, 0.69, 0.53 and 1.06 with a mean length of stay (per SRE with ≥ 1 hospitalisation) of 25.6, 41.1, 34.3 and 27.7 days. For SB (n = 137) mean number of hospitalisations per SRE was 0.90, 0.76, 0.83 and 0.75 with mean stays of 19.4, 19.8, 8.4 and 10.0 days, respectively. For PF (n = 254), mean number of hospitalisations per SRE was 0.42, 0.49, 0.49 and 0.39 with mean stays of 18.7, 22.4, 20.2 and 20.7 days, respectively. Mean number of hospitalisations per RB (n = 692) were 0.19, 0.15, 0.16 and 0.07 with mean stays of 17.9, 16.6, 21.9 and 10.4 days respectively. **CONCLUSIONS:** Each SRE leads to considerable hospitalisation, which varies by SRE type and country.

### PCN77
USE OF SUBSTANCE ABUSE AMONG RESIDENTS OF KARACHI: REASONS AND COST OF USING SUBSTANCES

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**OBJECTIVES:** Use of substances (pan, chaalia, ghutka, niswar) is associated with serious health risks. In Pakistan most people use substances from early years of life which keeps them on risk of short life span. It is important to understand the cost implication and provide knowledge about the effects of these substances. The aim of this study was to estimate the costs of using these substances and to understand the reasons for using substances. **METHODS:** This was a cross-sectional study conducted in two residential colonies in Karachi, Pakistan during 2008 and 2009. Pre-coded structured questionnaire was administered to collect the data on socio demographics, costs, reasons for use of substances and use of substances per day. The data was analyzed on SPSS version 18.0. Possible measures were taken to ensure the confidentiality of all participants. **RESULTS:** From 124 randomly selected residents, 107 (86%) agreed to respond. All the selected participants were between the ages 10–71 years (mean±sd age 36.2±16.4). Of the total, about one-fifth of the users were females. Daily use of substances was significantly higher among males (p<0.001). Further, the use was higher among adolescents than adults (p<0.001) and interestingly less educated consumed less than high educated (P=0.06). Males are spending significantly higher on substances; Rs. 37±11.5/day [Rs.930 or (US$13)/month] compared to females. Overall, 41% of the cost is spent on cigarettes followed by 27% and 23% on local and branded ghutka respectively. The main reasons for using substances were peer pressure, easy availability of substances, stress, liking of taste and to treat toothache. **CONCLUSIONS:** This study concluded that use of substances is higher among young males and they are spending a lot on them. To prevent this population, regular awareness campaigns may be held at community and school level so that, continuous re-enforcement make them to quit from using any kind of substances.

### PCN78
THE DEVELOPMENT OF A VALUE BASED PRICING INDEX FOR NEW DRUGS IN METASTATIC COLORECTAL CANCER

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**OBJECTIVES:** Worldwide, prices for cancer drugs have been under downward pressure where several governments have mandated price cuts of branded products. A better alternative to mandated price cuts would be the estimation of a launch price based on drug performance, cost effectiveness and a county's ability to pay. We developed a global pricing index for new drugs that encompasses all of these attributes in patients with metastatic colorectal cancer (mCRC). **METHODS:** A pharmacoeconomic model was developed to simulate clinical outcomes in mCRC patients receiving chemotherapy with the addition of a "new drug" that improves survival by 1.4, 3 and 6 months. Cost and health state utility data were obtained from cancer centers and oncology nurses (n=112) in Canada, Spain, India, South Africa and Malaysia. A price per dose was estimated for each survival increment using a target value threshold of three times the per capita GDP for each country, as recommended by the World Health Organization (WHO). Multivariable analysis was then used to develop the pricing index, which considers survival benefit, per capita GDP and income dispersion as measured by the Gini coefficient as predictor variables. **RESULTS:** Higher survival benefits were associated with elevated drug prices, especially in wealthier countries such as Canada. For Argentina with a per capita GDP of $15,000 and a Gini coefficient of 51, the pricing index estimated that for a drug which provides a 4 month survival benefit in mCRC, the value based price would be $U.S.630 per dose. In contrast, the same drug in a wealthier country like Norway could command a price of $U.S.2,775. **CONCLUSIONS:** The application of this index to estimate a price based on cost effectiveness would be a good starting point for opening dialogue between the key stakeholders and a better alternative to governments' mandated price cuts.

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Cancer – Patient-Reported Outcomes & Preference-Based Studies

### PCN79
IMPACT OF NON-ADHERENCE TO IMATINIB ON PROGRESSION-FREE SURVIVAL AS 1ST TREATMENT FOR CHRONIC MYELOID LEUKEMIA IN BRAZIL: TWO YEARS FOLLOW UP

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**OBJECTIVES:** Imatinib is considered standard of care for 1st line treatment of chronic myeloid leukemia (CML) in Brazil. Long-term treatment effectiveness, however, is jeopardized by questionable adherence among patients receiving imatinib. The goal of this study is to document the adherence of CML patients to imatinib and the impact of these adherence levels on long-term prognosis. **METHODS:** A longitudinal cohort analysis was performed using SIA/DATASUS data from January 2008 through Jun 2010. Inclusion criteria included patients ≥ 18 years old; diagnosed with CML (ICD10 92.1) in Chronic Phase; beginning 1st line treatment with imatinib from January 1, 2008 to December 31, 2008; and a minimum follow-up period of 6 months. Adherence of all patients that met inclusion criteria was calculated based on medication possession ratio (MPR) over a 15-month period. Patients were categorized as adherent (MPR ≥ 0.9) or non-adherent (MPR < 0.9). Using uni and multivariate logistic regression we analyzed the following covariates: adherence, age, gender, region of country and other comorbidities for their influence on progression rates. **RESULTS:** In total, 386 patients, 56% males and mean (SD) age 48 (15) years, were included in the study. There were 210 (54%) patients calculated as being adherent (MPR ≥ 0.9). At the end of the 24-months of follow-up, 20% patients from the non-adherent group had progressed, versus 10% in the adherent group (log-rank p=0,02). Patients from North, South and Southeast regions of Brazil had significantly higher adherence as compared with those from Northeast or Center-west. According to the multivariate logistic regression, lower adherence is significantly associated with higher progression rates. **CONCLUSIONS:** Adherence to imatinib is associated with a better progression-free survival profile, with statistical significance being observed after a 24-months period. Non-adherence was observed in 46% of the population studied.

### PCN80
### PATIENT PREFERENCES FOR TOXICITIES ASSOCIATED WITH CHEMOTHERAPIES FOR ADVANCED BREAST CANCER

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**OBJECTIVES:** Given that treatments for advanced breast cancer are palliative rather than curative, the patient-perceived impact of chemotherapy is a critical outcome. To date, no studies have estimated the strength of patient preferences for a comprehensive set of toxicities associated with breast cancer treatments. The objective of this study was to measure patient preferences for treatment-related toxicities in advanced breast cancer. **METHODS:** This was a cross-sectional Web-based survey of women with stage I through IV breast cancer who were recruited through web forums and newspaper ads. Using the standard gamble approach, each participant valued her own current health state in the absence of side effects and nine health states describing that current health state plus each of nine grade III/IV toxicities. Toxicity disutilities were calculated by subtracting the utility for current health from that for current health plus the toxicity. **RESULTS:** Of the 103 patients who completed the web survey, 21 had to be excluded given irrational responses. The mean 'current health' utility for the sample was 0.837. Patients assigned higher utilities to their current health state than to the toxicity states. Alopecia received the highest utility (mean=0.79; disutility = −4.6) of all the side effects, and diarrhea received the lowest (mean=0.69; disutility = −14.7). Patterns were similar across disease stages, although patients with more advanced disease (stage III or IV) generally assigned lower utilities (greater disutilities) to the various toxicities. For several side effects (alopecia, nausea, vomiting, fatigue, mucositis, and diarrhea), patients who had experience with the side effect reported higher utility values compared to those who had not experienced the side effect. **CONCLUSIONS:** To our knowledge, this study was the first to report strength of preferences for toxicities associated with advanced breast cancer treatments. The utilities obtained in this study may be used in future cost-effectiveness evaluations of breast cancer therapies.

### PCN81
### DIVERSITY IN BELIEFS ABOUT THE CAUSES OF CANCER: A QUALITATIVE APPROACH TO EVALUATE CANCER PATIENTS' UNDERSTANDING TOWARDS CANCER AND ITS CAUSES

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**OBJECTIVES:** Peoples' beliefs towards health and illness play an important role in health seeking behavior. Cancer patients' beliefs regarding cancer have been reported to be important factors affecting screening and treatment seeking behavior. This study was aimed to evaluate cancer patients' beliefs about cancer and its causes. **METHODS:** A qualitative research approach was adapted. After obtaining institutional ethical approval, patients with different types and stages of cancer from the three major ethnic groups in Malaysia were purposively selected to participate in the interview. Twenty patients whom had consented were interviewed using a semi-structured interview guide. After conducting 18 interviews the saturation point was reached and no more themes were emerged from the subsequent interviews. All interviews were audiotaped, transcribed verbatim and translated into English for thematic content analysis. **RESULTS:** The emergent themes were as follows: unknown reasons, internal factors, environmental perceptions, and spiritual attributions. In this preliminary investigation cancer patients described cancer as a disease present in every human being and it may become visible during the course of life. Genetic predisposition, female gender and hematological factors were reported to be some of the internal factors. Unhealthy life style habits such as smoking, high consumption of red meat, and pesticides in foods were some of the environmental factors that were described. Among those who claimed to have healthy habits prior to the illness, there was a rejection of the notion that unhealthy life style was a cause. A strong spiritual connection was found as many patients described their cancer diagnosis as 'God's will.' **CONCLUSIONS:** This exploratory investigation suggests that cancer patients' understanding about cancer is complex in nature. The findings may help health care providers remove myths about cancer and reassure patients during the treatment decision making process. It may also help in improving patients' compliance towards the proven cancer therapies.

### PCN82
### IMPACT OF OPTIMAL CML RESPONSE ON PATIENT SATISFACTION AND QUALITY OF LIFE: A PATIENT SURVEY FROM THE ASSOCIATION OF CANCER ONLINE RESOURCES (ACOR) DATABASE

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**OBJECTIVES:** To assess patients' knowledge of chronic myeloid leukemia (CML) treatment response categorizations and to evaluate health-related quality-of-life (HRQOL) outcomes and treatment satisfaction among CML patients achieving different levels of responses. **METHODS:** CML patients were invited to complete an on-line survey that assessed their knowledge of different CML treatment-response categorizations. Data on HRQOL outcomes and treatment satisfaction were also collected. Chi-square and Fisher's test were used for statistical comparisons. **RESULTS:** 123 patients obtained through the ACOR database completed the survey. The mean age of respondents was 63 years, 48.8% were male, and 95.9% had some level of college experience. Over 90% were familiar with the different levels of CML treatment responses, with 96.8% self-reporting a current hematologic response, 70.7% a current cytogenetic response, and 68.3% a molecular response. However, 71.5% felt CML patients need more information on the types of responses, with the desire for information to come from their physicians (66.7%) rather than from other staff (28.5%) or pamphlets (23.6%). Achieving a molecular response (as opposed to hematologic/cytogenetic responses) generated the greatest satisfaction with their physician (78.6%), medication (86.6%), outlook on life (85.7%), and day-to-day functioning (85.7%). The percentage of patients rating their own health as excellent/ very good was 43.1% among those with a molecular response and 41.7% with a cytogenetic response. However, 21.9% of all subjects rated their health as fair/poor. **CONCLUSIONS:** Achievement of a molecular response was associated with a higher satisfaction with a patient's physician, medication, and outlook on life, as well as an overall improvement in self-reported health ratings. Even in this highly educated ACOR population, a need for physician-directed information about various response criteria and counseling about the value of obtaining a molecular response is desired.

### PCN83
### A COMPARISON OF PREFERENCES FOR TARGETED THERAPY FOR METASTATIC RENAL CELL CARCINOMA

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**OBJECTIVES:** To evaluate and compare the preferences for targeted therapy for metastatic renal cell carcinoma in cancer patients, patients' family members and medical experts. **METHODS:** Using discrete choice experiment, survey questions were constructed on the basis of six attributes of efficacy, adverse events and administration. We designed two kinds of scenario sets as first-line therapy and therapy for poor prognosis. A total of 485 individuals were completed questionnaire: 140 cancer patients, 60 patients' family members and 285 medical experts(39 oncology doctors, 34 oncology nurses, 133 nurses and 79 pharmacists). **RESULTS:** In first-line therapy and therapy for poor prognosis, all six attributes in studies were statistically significant so they were important for choices. In first-line therapy coefficients of six attributes in patients and medical experts were all statistically significant but not progression free survival(PFS) in patients' family members. Between patients and doctors, PFS, hand-foot skin reaction(HFSR) and administration were statistically significantly different. Between patients and nurses, the coefficients of bone marrow suppression, HFSR, gastrointestinal perforation and administration were significantly different. In therapy for poor prognosis, six attributes were statistically significant in patients but not administration in patients' family members. Between patients and doctors, coefficients of PFS, HFSR, interstitial pneumonitis in doctors. Between patients and doctors, coefficients of PFS, HFSR, asthenia and interstitial pneumonitis were different significantly. Between patients and nurses, five attributes were significantly different except HFSR. **CONCLUSIONS:** Efficacy, adverse events and administration were all important for preference in respondents. Comparisons of coefficients between subgroups represented different preferences of those groups. Medical experts especially doctors showed quite different preferences from patients and patients' family members. Doctors considered efficacy more important than adverse event so they favored the more effective and orally administered drug even if the drug had adverse events more frequently. But patients and patients' family members showed reluctant attitudes about adverse events.

### PCN84
### PATIENTS' PREFERENCES FOR THE TREATMENT OF COLORECTAL CANCER: A DISCRETE CHOICE EXPERIMENT (DCE) SURVEY

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**OBJECTIVES:** Colorectal cancer (CRC) is one of the most common cancers worldwide. major treatment advances, however, have changed the assumptions about