before inclusion diagnosed -histologically confirmed-, in any progression state and already treated or under treatment. All diagnosis methods used and health care utilization resources were collected, expressed their cost as 2007 €. RESULTS: A total of 1404 patients (pts) have been evaluated (mean age: 70.2 ± 8.6). Nine percent of pts were diagnosed by screening PSA programs, 50% by either general practitioner or specialist and 42% by urologist. Screening programs were performed significantly more frequent in younger pts (<45 años), with University degree, familiar precedent and workers in assets. Three consecutive phases on diagnosis process were identified: 1) First PSA origin, 2) Confirmation/Differentiation and 3) Extension study. 1st step included: opportunistic screening, physician recognition, complete med tests and PSA; 2nd: Transrectal ultrasonography, prostate biopsy and Gleason; & 3rd: Computed tomography (CT) magnetic resonance imaging (MRI), urography, isotopic bone scan (IBS), abdominal sonography and PET. Any additional step/test were added based on clinical criteria. Based on International Guidelines: 77.6% of IBS were well done vs. 43.8% not recommended; CT 64.8% vs 48.8% not. Final total cost, in case all steps/procedures were done, was €2339.95 ± 680.14, and for each step: 1st €246.47 ± 0.06, 2nd €1650.17 ± 587.27 and 3rd €511.43 ± 313.42. CONCLUSIONS: Prostate cancer diagnosis methods in Spain are widely variable. Gold standards are not followed strictly. Potential savings for Spanish NHS could be gather if additional not recommended test were not done increasing adherenc to gold standards.

CANCER—Conceptual Papers & Research on Methods

PCN107
NEW OPPORTUNITIES FOR DRUG OUTCOMES RESEARCH IN CANCER PATIENTS: VALIDATION OF THE LINKAGE OF THE EINDHOVEN CANCER REGISTRY AND THE PHARMO RECORD LINKAGE SYSTEM
Sukel MPP1, Van de Poll-Franse LV1, Coebergh JWV2, Herings RMC1
1PHARMO Institute, Utrecht, The Netherlands; 2Eindhoven Cancer Registry, Eindhoven, The Netherlands
OBJECTIVES: To validate the linkage of the Eindhoven Cancer Registry (ECR) and the PHARMO Record Linkage System (PHARMO RLS). METHODS: The ECR records data on all newly diagnosed cancer patients in the Southeastern Netherlands whereas the PHARMO RLS includes data on e.g. in- and outpatient drug use, hospital morbidity and clinical laboratory. The overlapping catchment area of both registries includes approximately 1 million inhabitants. The linkage of the ECR and PHARMO RLS was performed with the PHARMO Probabilistic Record Linkage Engine. After pairing records from both registries on date of birth and gender, a linkage weight was calculated, based on first initial, first letter last name and 4-digit zip code. The suggested threshold weight was used to divide pairs in correct and incorrect linked pairs, i.e. pairs that include information from both registries that point to the same or to different patients, respectively. The sensitivity and specificity of this linkage process was validated using a random subset of linked and non-linked patients which were compared with a ‘gold-standard’ using detailed personal information from the original data sources. RESULTS: Of N = 38,197 cancer patients from the ECR living in the PHARMO catchment area, N = 47,012 (81%) were linked to a patient from the PHARMO RLS and regarded as being the same patient. The validated subset consisted of 2887 true positive linked pairs and the linkage of this subset yielded a specificity of 99.5% (95% CI: 99.4%–99.7%) and a sensitivity of 98.3% (95% CI: 97.7%–98.7%). CONCLUSIONS: The linkage of the ECR and the PHARMO RLS is highly sensitive and specific. The new linked database includes of more than 80% of the cancer patients detailed information on in- and outpatient drug treatment, co-medication, co-morbidity and other clinical and economical details and can be used as a new source for outcomes research in cancer treatment and post-marketing surveillance of drug-induced cancer.

PCN108
DEVELOPMENT OF AN INTERACTIVE MODEL OF FINANCIAL ACCESS TO CANCER THERAPY
Lines LM1, Lang K1, Wallace JP2, Neumann PJ3, Friedman M4, Menzin J5
1Boston Health Economics, Inc, Waltham, MA, USA; 2Genentech, Inc, South San Francisco, CA, USA; 3Tufts Medical Center, Boston, MA, USA; 4Boston Health Economics, Waltham, MA, USA
OBJECTIVES: Financial access to medical technologies in the United States may be driven by many factors, including drug costs, health insurance coverage, benefit designs, and patients’ ability or willingness to pay for treatment. Studies evaluating out-of-pocket costs for cancer treatment have been conducted; however, no national models of financial access currently exist. METHODS: We developed a conceptual framework for an interactive model of financial access to cancer therapy. To illustrate the model’s operation, we applied it to treatment of HER2+ breast cancer patients. The model traces the flow of patients along pathways of a decision tree. Beginning with the US population, the model branches by sex, breast cancer or no breast cancer, HER2+ or HER2– cancer, and insurance status. Only patients in the HER2+ branch are followed forward through the model. Patients are stratified by payer and benefit design, eligibility for patient assistance programs, and ability to pay for treatment without spending more than a pre-specified percentage of family income out-of-pocket. Data sources include custom analyses of publicly available databases (to determine incidence/prevalence and the annual income and expenditures of breast cancer patients), clinical trial data on dosages, and national survey data on the proportion of patients with different benefit designs. The user interface allows for unlimited variations in key input parameters. RESULTS: Model outputs include a series of graphs showing financial access before and after adding specific treatments, with and without support from patient assistance programs. Results are presented by payer, age, and income. Sensitivity analyses can be conducted to evaluate the robustness of results. CONCLUSIONS: While it is difficult to ascertain the number of patients who are not receiving treatment because of financial barriers, it is possible to develop a model that appropriately considers the main drivers of financial access to estimate the impact of financial barriers.

PCN109
DEALING WITH QUALITY OF LIFE MISSING DATA IN A SINGLE ARM STUDY. COMPARISON OF MULTIPLE IMPUTATION METHODS
Arnaut A1, Ivanescu C2, van Engen A3, Peeters P4
1Quintiles Consulting, Levallois-Perret, France; 2Quintiles Consulting, Amsterdam, The Netherlands; 3Tufts Medical Center, Boston, MA, USA; 4Quintiles Consulting,苏州, China
OBJECTIVES: Assessment of Quality of Life (QoL), a Patient Reported Outcome (PRO), has gained acceptance as a study endpoint. An open-label, multicenter phase II, single arm oncology study was conducted with a QoL endpoint aiming to assess change of scores from baseline to 12-week or End of Study (whichever occurred first). This required the availability of the baseline and at least one post-baseline assessment. Unfortunately, missing data affects the validity of QoL assessment. A set of