external data using Bayesian MCMC methods. Economic analysis was undertaken using 1) standard cost-utility decision rules within each topic, and 2) constrained optimisation across all modelled topics. **RESULTS:** The guideline included fifteen individual economic evaluation topics. Under usual processes, piecewise economic modelling would have been used to evaluate between one and three guideline topics. The Whole Disease Model provided a consistent platform for the economic evaluation of eleven of the fifteen guideline topics, ranging from alternative diagnostic technologies through to cytotoxic treatments for metastatic disease. The constrained optimisation analysis identified a configuration of colorectal services which was expected to maximise QALY gains without exceeding current expenditure levels. **CONCLUSIONS:** This study demonstrates that Whole Disease Modelling is feasible and can allow for the economic analysis of virtually any intervention across a disease service within a consistent conceptual and mathematical infrastructure. The approach may be especially valuable in instances whereby a substantial proportion of a disease service has not previously been subjected to economic evaluation.

PCN194

THE USE OF LARGE GPS LONGITUDINAL DATABASE IN THE REASEARCH OF CAUSAL ASSOCIATIONS AMONG PATHOLOGIES: THE CASE OF DIABETES AND CANCER INCIDENCE

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OBJECTIVES: To study the association between Diabetes Mellitus (DM) and the incidence of Cancer, focusing on type-specific and sex-specific cancers. **METHODS:** Study's data were obtained from CSD LPD, an Italian General Practitioner's longitudinal database. We have evaluated the risk of Cancer incidence among people with DM compared with those without this pathology, in patients who had no reported history of Cancer at the start of the follow-up on January 2006. For the DM group, patients with at least one diagnosis of DM and a GP contact from January - December 2005 have been selected, while for the DM free group, patients without a diagnosis of DM and a contact with the GPs in the same period have been selected. Both groups have been followed-up for 5 years. In order to evaluate an association between the presence of DM and the incidence of Cancer multivariate logistic models adjusted by age and sex have been implemented. **RESULTS:** A total of 73.144 (6 %) patients with a diagnosis of DM and 1.119.652 (94%) patients without DM diagnosis were selected. During follow-up 8.824 and 82.477 incident cases of Cancer were documented from the DM and DM free groups respectively. Statistical analysis showed an Adjusted (age and sex) Odds Ratio of 1,06 (95% Cl 1,06-1,20) suggesting that patients with DM have a 6% increased risk of cancer incidence (all types). Regarding type-specific cancer analysis the OR for Liver cancer (2,44 [95% Cl 2,11-2,82]) and Pancreas cancer (2,27 [95% Cl 1,95-2,66]) were higher for DM patients. Regarding sex-specific cancers, the risk of Uterine body cancer was higher for diabetic women (1,52 [95% Cl 1,17-1,99]), while in men DM seems to have a protective effect, for example in Prostate cancer (0,86 [95% Cl 0,79-0,95]). **CONCLUSIONS:** Patients with DM may be at increased risk of total, site-specific and sex-specific cancer.

PCN195

BAYESIAN CALIBRATION OF A CERVICAL CANCER MODEL USING MARKOV CHAIN MONTE CARLO

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OBJECTIVES: Simulation models are an essential tool in estimating the impact of vaccination, screening and treatment on cancer rates. Model calibration is the process of identifying reasonable values for model parameters, such that the outputs of the model are close to values observed in a real population. The purpose of this work was to calibrate an existing model for cervical cancer using Irish data and Markov Chain Monte Carlo (MCMC) in a Bayesian framework. This is compared and contrasted with a previous random search calibration. **METHODS:** An existing microsimulation model for cervical disease which was coded in C was embedded in a loop running in R. MCMC, which is an iterative algorithm was implemented in parallel on multiple desktop machines and the results were collated for analysis. The calibration method used differs from pure optimisation strategies and identifies a probability distribution on the parameter space, which is of benefit for models requiring probabilistic sensitivity analysis. **RESULTS:** Estimates of the model parameters were obtained from both MCMC and from the fitting of existing reference parameter sets resulting from a random search of the parameter space. These are compared on the basis of goodness of fit statistics (the sum of squared errors between targets and fitted values). Of 20 MCMC chains that were run, 5 of them gave better fits than the best fit sets for the random search method. However, 8 of the 20 chains had not reached parameter sets that gave good fits when compared with the best 135 fitted sets from the random search method. **CONCLUSIONS:** MCMC is a useful technique which provides probabilistic estimates of the parameters of interest in a calibration exercise. Care is needed with starting values and proposal distributions to ensure that the chains have converged and that the parameter space is properly explored.

PCN196

REVIEW OF COST EFFECTIVENESS OF TRASTUZUMAB IN EARLY BREAST CANCER

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OBJECTIVES: The treatment of breast cancer is associated with high costs, influenced by the introduction of more effective but expensive drugs, such as trastuzumab. This study aims to review cost-effectiveness studies of trastuzumab in the adjuvant setting of early breast cancer and to explore the relation between (methodological) differences in study design and cost-effectiveness outcomes. **METHODS:** A systematic review was performed to identify cost-effectiveness studies of trastuzumab published between January 1998 and March 2011. All costs were converted to 2009 Euros. Sources of variation in study design were identified and divided into three categories: 1) methodological factors prescribed by national guidelines; and 2) intrinsic factors, such as methodological or practical choices made by the principal researchers; 3) extrinsic factors, such as the price of trastuzumab. **RESULTS:** Fourteen cost-effectiveness studies were identified of which one was a meta-analysis integrating data of multiple clinical trials. All were modelling studies. ICERs of chemotherapy + trastuzumab vs. chemotherapy alone ranged from being the dominant strategy to € 87.889/QALY gained. The level of detail presented regarding study design and outcomes differed strongly, hampering the identification of factors influencing this wide range of outcomes. However, of the mutually presented aspects, especially the treatment regimen of the underlying clinical trial seemed to influence outcomes. Variation among studies using the same clinical trial appeared related to methodological factors prescribed by national guidelines, such as perspective and time horizon, intrinsic factors, such as assumed duration of benefit and extrinsic factors, e.g. country specific practice variation. **CONCLUSIONS:** Cost-effectiveness levels of trastuzumab differed strongly, even between modelling studies based on the same clinical trial. Outcomes were influenced by methodological aspects such as time horizon chosen and assumed duration of benefit. A higher level of detail presented in the articles is needed to increase insight in causes of variation in cost-effectiveness outcomes.

PCN197

HEALTH RELATED QUALITY OF LIFE IN LONG TERM SURVIVORS OF LYMPHOMA: A POPULATION BASED STUDY

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OBJECTIVES: To assess the health related quality of life (HRQoL) in the growing group of long term lymphoma survivors with preference based instruments. **METHODS:** Population based cross-sectional data was collected in patients diagnosed with Hodgkin lymphoma (HL) or non-Hodgkin lymphoma (NHL) (N=778). HRQoL was measured using both a generic and a disease specific preference-based instrument, the EQ-5D 5-level and a time-trade-off valued version of the EORTC QLQ-C30. **RESULTS:** On average patients with HL or NHL were diagnosed 4.35[±SD 2.56] years prior to the study. Mean QoL was 0.83 using EQ-5D [±SD .16, Range -.11 - 1.0] and 0.88 using QLQ-C30 [±SD .10 Range .38 - 1.0]. Mean EQ-5D score for lymphoma survivors is significantly lower than the average HRQoL found in the Dutch population ($p<0.001$). However, mean QLQ-C30 score for lymphoma survivors did not differ from the Dutch population. Regression analysis identified a significant lower HRQoL with having active disease (measured by treatment activity) and comorbidities depression, high blood pressure, respiratory diseases, osteoarthritis, and back-pain. Age, type of lymphoma, and time passed since diagnosis did not affect HRQoL. The discrepancy between EQ-5D and QLQ-C30 in deviation from the Dutch population is likely to be caused by better discrimination of worse health states in the EQ-5D. **CONCLUSIONS:** The average HRQoL in long-term lymphoma survivors seems relatively high, especially when measured by the QLQ-C30. However, subgroup analyses revealed HRQoL was affected by active disease and comorbidities, other than, but perhaps related to, cancer. This has two important implications. Firstly, population-based studies need to incorporate comorbidities to adequately assess and forecast HRQoL in lymphoma survivors. Secondly, in economic evaluations the modelling of cancer free survival needs to be reconsidered since HRQoL in life years gained is affected by comorbidities. Future economic evaluations should incorporate these two implications to obtain more accurate HRQoL estimates.

PCN198

REVIEW OF ECONOMIC ASSESSMENTS OF EMERGING GENOMIC TECHNOLOGIES IN ONCOLOGY

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OBJECTIVES: A systematic review of the economical assessment studies on genomics and proteomics in the field of oncology. Our aim is to analyze those emerging diagnostic and therapeutic technologies whose cost effectiveness ratio make them suitable for its adoption in the different health systems from a social point of view. **METHODS:** We locate the most relevant studies in the last 10 years in Medline, Embase, Cancerlit, Cochrane Library databases and we analyze the results. The following keywords were used: genetic screening, gene, pharmacogenomics, proteonomics, microarrays, biochips, cost analysis, cost effectiveness, cost benefit, cost minimization, neoplasm, tumour and cancer. **RESULTS:** We analyze 13 studies from which 5 assess aspects about breast cancer, 7 about colorectal neoplasm, and 1 about urologic pathology. From these analyzed studies, 4 were cost utility studies, 8 were cost effectiveness studies, and one was a cost minimization study. **CONCLUSIONS:** We highlight the increase of economical assessment studies on genomics and proteomics, constituting an invaluable help for the sanitary and medical decision makers over the suitability and relevance of incorporating the contributions of genomics and proteomics in the field of oncology, introducing the specific ethical and social aspects of this specialty.