a hospital performing 50 knee and 50 hip surgeries every year, this potential for cost-offsets would be of (-R$108,850). This would vary a lot for the perspective of HMOs and hospitals of different sizes, as well as depending on the costs of each decision maker, demanding constant customization of parameters. **CONCLUSIONS:** The use of IEI makes the pharmacoeconomic studies results more intelligible to decision makers, permitting them to foresee their actual application on a real practice, in different scenarios.

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LINKAGE OF ADMINISTRATIVE AND MEDICAL RECORDS DATABASES FOR INVESTIGATING PHARMACEUTICAL USE AND OUTCOMES

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BACKGROUND: Use of electronic health care databases to examine pharmaceutical use and effects faces limitations inherent in the source of data. Medical records document prescribing but not consumption of medication; administrative databases document dispensing but not the original intent of the prescriber. **OBJECTIVES:** To evaluate a patient-level linked database of electronic medical records (EMR) and administrative claim for use in measuring both prescribing and dispensing of pharmaceuticals. **METHODS:** Claims data from Thomson Reuters MarketScan database were linked to the GE Centricity EMR database using probabilistic methods to overcome the de-identification required of both databases under US privacy laws. Patient-level records were matched based on demographic characteristics and calendar dates of physician visits. Multiple visits were required to reduce the likelihood of mismatches. The agreement between prescribing records in the EMR and claims for dispensing of medication was explored in the context of self-administered medication for osteoporosis, including bisphosphonates and raloxifene. **RESULTS:** Using data from 2004–2009, 219,529 patients were matched between the two data sources. Mean age was 43 years and 57% were female. We identified 2,331 patients whose medical record showed new prescriptions for bisphosphonates or raloxifene (no evidence of use in the prior 180 days). Pharmacy claims indicated these prescriptions were filled by 56% of patients within 7 days, 75% within 30 days, and 86% within 90 days. **CONCLUSIONS:** It is to be expected that there will be some degree of noncompliance, hence incomplete filling of prescriptions, as observed. The lag from dispensing to prescribing among many patients is also consistent with use of samples for initial prescriptions. Overall, the example of osteoporosis therapy shows consistency between prescribing in EMR data and dispensing in claims data among a sample of probabilistically linked patient records.

PMS74

CLAIMS-BASED SEVERITY INDEX FOR RHEUMATOID ARTHRITIS FROM HEALTH CARE CLAIMS DATA

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OBJECTIVES: Controlling for disease severity in observational studies is crucial to get an estimate with no selection bias. However, outcomes research studies using claims data, contain no information about disease severity. Therefore, comorbid scores are used for a proxy for the disease severity. There exists no severity score specific for rheumatoid arthritis (RA). The goal of this study was to develop a severity index for rheumatoid arthritis (SIFRA) for private health care claims data. **METHODS:** We extracted the following variables related to rheumatoid arthritis from the claims data: total number of synthetic disease-modifying anti-rheumatic drugs (DMARDs), total number of biological DMARDs, tests for C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR) ordered, rehabilitation visits, rheumatology visits, Felty's syndrome and Sjogren's syndrome, pulmonary, soft tissue nodules, joint surgery, number of platelet counts and chemical panels ordered, and rheumatoid factors testing. a linear regression model was used to create the severity score. The severity score was compared with the rheumatoid arthritis medical records-based index of severity (RARBIS) and currently-used comorbidity scores to proxy severity in outcomes research studies related with rheumatoid arthritis. **RESULTS:** According to the Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), log likelihood function, R-squared values and average squared prediction error, SIFRA performed better than RARBIS, Charlson Comorbidity Score (CCI), Elixhauser comorbidity score and Chronic disease score. Spearman correlation with RARBIS was 0.65 and significant. However, the correlation with the Charlson Comorbidity Index (0.1, $p = 0.6521$), Elixhauser Index (0.15, $p = 0.5312$) and Chronic disease score (0.13, $p = 0.6011$) were low and insignificant. **CONCLUSIONS:** Comorbidity scores (Charlson, Elixhauser or Chronic Disease Scores) commonly used in outcomes research are inadequate to be proxy variable for RA patients. SIFRA, at least for rheumatoid arthritis, controls for disease severity better than any other commonly used measure.

PMS75

MODELING OF RHEUMATOID ARTHRITIS: A METHODOLOGICAL APPROACH

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OBJECTIVES: Reimbursement agencies like the United Kingdom (UK) National Institute for health and Clinical Excellence (NICE) use mathematical modelling to analyze the costs and benefits of health care technologies. The structure of these models is not pre-specified, but dependent on the requirements of the decision problem on hand. Various decision-analytic models have been developed to assess the potential clinical and economic benefits of several RA treatment regimes, including anti-TNF agents and early use of disease-modifying anti-rheumatic drugs (DMARDs). The main objective is to provide a guide on how to model treatment options for early rheumatoid arthritis, in particular etanercept. Thus, it sought to address the methodological issues relating to the choice of modeling technique. **RESULTS:** Previous analyses have used a variety of modelling approaches to model treatment options for RA. The rationale for the choice of model structure is rarely discussed in published studies and can affect the results produced. Advances in the treatment of RA make it necessary to develop a model which is flexible enough to account for different attributes (e.g. clinical remission, radiographic non-progression, and functional status), but does not increase the complexity of the model to an amount where it becomes too difficult to populate it with relevant data. Individual level models offer a solution to this problem by simulating the progression of each individual with different characteristics, where non-Markovian distributions allow greater flexibility in modelling the timing of events. Further, based on the characteristics of the disease, the model should assume independence between individuals, whilst, based on its treatment options, as assessment of adequate treatment response is important, time should be modeled. **CONCLUSIONS:** This work suggests that future analyses should use individual sampling models (e.g. simulated patient-level Markov models) for modelling the costs and benefits of treatments for RA.

PMS76

A LONGITUDINAL COMPARISON OF MAPPING EQUATIONS DERIVED FROM BASELINE AND POST-INTERVENTION DATA

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OBJECTIVES: Mapping from disease-specific to utility measures is a research area gaining increasing attention. However, few studies have assessed the longitudinal validity of mapping models and none, to our knowledge, have compared models derived from baseline and post-intervention patient data. This study examined models derived from time-differing patient data, for mapping the Modified Health Assessment Questionnaire (MHAQ) on to the EQ-5D. **METHODS:** A total of 120 rheumatoid arthritis patients (60.0% female, mean age 59.0) completed the MHAQ and EQ-5D at baseline, and 3, 6 and 12 months after administration of an anti-TNFa or another biological agent. OLS regression produced mapping equations from baseline and post-intervention data. Model predictive ability and explanatory power were assessed by root mean square error (RMSE) and adjusted R^2 respectively. Pearson's r and intra-class correlation coefficient (ICC) assessed association and level of agreement between predicted and reported utilities. **RESULTS:** R^2 (baseline, 3, 6 and to 12 months) was 0.452, 0.418, 0.541 and 0.413 respectively, whereas prediction errors were 13.0%, 11.1%, 8.1% and 7.2%. All equations produced a range of scores comparable to those achieved by the standard EQ-5D scoring algorithm, as well as strong correlations and agreement between reported and predicted utilities. The baseline and 12-month models appeared to under- and overestimate EQ-5D scores respectively, whereas the 6-month model generated the smallest differences, typically less than the minimally important difference for the EQ-5D (0.03). **CONCLUSIONS:** Baseline data, which typically corresponds to lower patient HRQOL, may give mapping equations with compromised predictive ability, compared to models generated from post-intervention data, and this study showed that this factor is worth examining when longitudinal data are available. The next step in this line of research is to test QALY estimates and cost-utility increments derived from baseline and post-intervention mapping algorithms.

PMS77

THE DETERMINANTS OF SOCIAL ROLES AMONG RHEUMATOID ARTHRITIS PATIENTS—DATA FROM THE NDB PORTUGAL COHORT

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BACKGROUND: An important consequence of rheumatoid arthritis (RA) is disability, traditionally assessed by the Health Assessment Questionnaire (HAQ), which captures the physical component. Disability can also be evaluated by restricted performance of social roles and those predictors haven't been extensively studied. **OBJECTIVES:** Determinants of social roles, among RA patients, as evaluated by paid work and social functioning were studied. **METHODS:** A total of 1,140 RA patients from the NDB-Portugal longitudinal cohort were analyzed. Univariate (UV) and Multivariate (MV) generalized estimating equations were used to assess whether the following factors were determinants of paid work (1 = yes 0 = no, OR; 95%CI) and of SF-36 social functioning (0–100, 100 is best, β; 95%CI): age, sex, marital status, educational level, number of people living in patient's household, dependence on others, RA duration, number of major comorbidities, TNF, anxiolytic and/or antidepressant use, HAQ, disease activity (RADAI), quality of life (VASQOL), pain, fatigue and sleep disturbances (VAS scales, 0–10, 10 is worst). **RESULTS:** In MV analysis the odds of having a form of paid work increased with higher education (1.17; 1.12, 1.22) and better VASQOL (1.92; 1.15, 3.20) and decreased with higher age (0.91; 0.90, 0.93),