fracture incidence. For example, the published incidence_pop for spinal fractures for males age 80-84 is reported as 3.56/1,000 patient-years. When incidence_pop is used as incidence_no_risk, our model predicted 6.89 spinal fractures/1,000 patient-years for males age 80-84 is reported as 3.56/1,000 patient-years. For patients within 10 years of age 80, the incidence was 0.01/1,000 patient-years. In the model, the incidence in Bogota, Colombia. Costs were calculated using the data from most current base case scenario, which uses incorrectly high list prices and ignores indirect cost savings. Our analysis shows that cost-effectiveness analysis of drugs for chronic diseases need to consider indirect costs and need to take a lifetime modeling perspective.

PMS44
HEALTH CARE EXPENDITURES ASSOCIATED WITH DEPRESSION AMONG INDIVIDUALS WITH OSTEOARTHRITIS: POST-REGRESSION LINEAR MIXED-EFFECTS APPROACH
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OBJECTIVES: To assess the association of depression with osteoarthritis and health care expenditures after controlling for predisposing (gender, race, age), enabling (marital status, education, employment, poverty status, insurance coverage, lifestyle (Body-Mass index, exercise, and smoking status), and external environment factors (metro versus non-metro). Post-regression linear mixed-effects technique was used to estimate the relative contribution of individual-level variables to the excess expenditures associated with depression and osteoarthritis compared to those without depression. RESULTS: Among individuals with osteoarthritis 20.6% reported having depression. The average total health care expenditures were $13,684 for those with depression compared to $9,284 among those without depression. OLS regression on log-transformed total health care expenditures revealed that those with depression had 38.8% greater health care expenditures (p < 0.001) compared to adults without depression. Post-regression linear mixed-effects analysis indicated that nearly 56% of the difference in average health care expenditures among adults with and without depression can be explained by differences in individual-level characteristics between the two groups. These differences may be attributable mainly to the need factors such as perceived health status, anxiety, presence of cardiovascular conditions, and other chronic conditions. CONCLUSIONS: Results from the study suggest that excess health care expenditures associated with depression may be reduced by improving the co-management of chronic physical and mental health conditions.

PMS45
RESOURCE USE RELATED TO VERTEBRAL FRACTURES BASED ON DATA FROM ICURS
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THE COST-EFFECTIVENESS OF ALTERNATIVE TREATMENT SEQUENCES IN RHEUMATOID ARTHRITIS
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OBJECTIVES: Many patients with rheumatoid arthritis (RA) fail to respond adequately to treatments. Costs for treatment failure are high with conventional synthetic disease-modifying antirheumatic drugs (cDMARDs). Biologic disease-modifying antirheumatic drugs (bDMARDs) have improved outcomes, and multiple guidelines National Institute for Health and Care Excellence (NICE) govern their prescription in England and Wales. The study aimed to compare the effectiveness and cost-effectiveness of alternative bDMARDs versus cDMARDs in patients who have failed to respond to at least two cDMARDs. METHODS: A discrete event simulation model was used to explore the cost-effectiveness of bDMARDs in combination with methotrexate versus cDMARDs. Populations of interest were patients with severe and moderate to severe RA who failed to respond to at least two cDMARDs including methotrexate (cDMARD-MTX). In the severe population, eight alternative bDMARD strategies were evaluated. In 2008. In 2008, etanercept was the most expensive and the best selling drug in the German statutory health insurance system with net expenditure of $81 m. We aim to analyze the cost-effectiveness of adalimumab for the treatment of RA in Germany. METHODS: We set up a Markov Chain Monte Carlo lifetime simulation model to evaluate 10,000 hypothetical patients. Initially, patients can achieve one of three responses according to American College of Rheumatology criteria or fail to respond, which was the assumed initial status. In each cycle, treatment might be discontinued due to loss of efficacy or adverse events. RESULTS: In the base case, patients gain 2.64 quality-adjusted life years (QALYs) with methotrexate monotherapy and 6.25 QALYs if adalimumab combination therapy is added to the treatment algorithm. The incremental cost-utility ratio (ICUR) is $32,210 based on German list prices. After deduction of mandatory taxes and rebates, the ICUR is only 23,755. Adalimumab combination therapy lowers indirect cost from 295,070 € to 235,531 €. The ICUR based on total cost is 15,728 € (7,274 € after deducting taxes and rebates). ICURs further improve for younger baseline age. Limiting the simulation time to 5 or 10 years increases ICURs. CONCLUSIONS: Adalimumab therapy for the treatment of RA is cost-effective in Germany even in the baseline scenario, which uses incorrectly high list prices and ignores indirect cost savings. Our analysis shows that cost-effectiveness analysis of drugs for chronic diseases need to consider indirect costs and need to take a lifetime modeling perspective.

PMS43
THE COST-EFFECTIVENESS OF ADALIMUMAB FOR RHEUMATOID ARTHRITIS IN GERMANY
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OBJECTIVES: Rheumatoid Arthritis (RA) can be treated with TNFα inhibitors after the failure of conventional disease-modifying antirheumatic drugs like methotrexate. The percentage of German patients treated with TNFα inhibitors has been rising from 2 in 6,200 in 2006. In 2006, etanercept was the most expensive and the best selling drug in the German statutory health insurance system with net expenditure of $81 m. We aim to analyze the cost-effectiveness of adalimumab for the treatment of RA in Germany. METHODS: We set up a Markov Chain Monte Carlo lifetime simulation model to evaluate 10,000 hypothetical patients. Initially, patients can achieve one of three responses according to American College of Rheumatology criteria or fail to respond, which was the assumed initial status. In each cycle, treatment might be discontinued due to loss of efficacy or adverse events. RESULTS: In the base case, patients gain 2.64 quality-adjusted life years (QALYs) with methotrexate monotherapy and 6.25 QALYs if adalimumab combination therapy is added to the treatment algorithm. The incremental cost-utility ratio (ICUR) is $32,210 based on German list prices. After deduction of mandatory taxes and rebates, the ICUR is only 23,755. Adalimumab combination therapy lowers indirect cost from 295,070 € to 235,531 €. The ICUR based on total cost is 15,728 € (7,274 € after deducting taxes and rebates). ICURs further improve for younger baseline age. Limiting the simulation time to 5 or 10 years increases ICURs. CONCLUSIONS: Adalimumab therapy for the treatment of RA is cost-effective in Germany even in the baseline scenario, which uses incorrectly high list prices and ignores indirect cost savings. Our analysis shows that cost-effectiveness analysis of drugs for chronic diseases need to consider indirect costs and need to take a lifetime modeling perspective.

PMS42
THE COST-EFFECTIVENESS OF ADALIMUMAB FOR RHEUMATOID ARTHRITIS IN GERMANY
Gisler C1, Juttner Leibig University, Gießen, Germany
OBJECTIVES: Rheumatoid Arthritis (RA) can be treated with TNFα inhibitors after the failure of conventional disease-modifying antirheumatic drugs like methotrexate. The percentage of German patients treated with TNFα inhibitors has been rising from 2 in 6,200 in 2006. In 2006, etanercept was the most expensive and the best selling drug in the German statutory health insurance system with net expenditure of $81 m. We aim to analyze the cost-effectiveness of adalimumab for the treatment of RA in Germany. METHODS: We set up a Markov Chain Monte Carlo lifetime simulation model to evaluate 10,000 hypothetical patients. Initially, patients can achieve one of three responses according to American College of Rheumatology criteria or fail to respond, which was the assumed initial status. In each cycle, treatment might be discontinued due to loss of efficacy or adverse events. RESULTS: In the base case, patients gain 2.64 quality-adjusted life years (QALYs) with methotrexate monotherapy and 6.25 QALYs if adalimumab combination therapy is added to the treatment algorithm. The incremental cost-utility ratio (ICUR) is $32,210 based on German list prices. After deduction of mandatory taxes and rebates, the ICUR is only 23,755. Adalimumab combination therapy lowers indirect cost from 295,070 € to 235,531 €. The ICUR based on total cost is 15,728 € (7,274 € after deducting taxes and rebates). ICURs further improve for younger baseline age. Limiting the simulation time to 5 or 10 years increases ICURs. CONCLUSIONS: Adalimumab therapy for the treatment of RA is cost-effective in Germany even in the baseline scenario, which uses incorrectly high list prices and ignores indirect cost savings. Our analysis shows that cost-effectiveness analysis of drugs for chronic diseases need to consider indirect costs and need to take a lifetime modeling perspective.

PMS41
ECONOMIC EVALUATION OF TOFACITINIB COMPARED WITH BIOLOGICAL THERAPY AS INITIATION AFTER FAILURE TO METHOTREXATE IN ADULTS WITH RHEUMATOID ARTHRITIS IN COLOMBIA
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OBJECTIVES: To compare, from the Colombian health care system perspective, both costs and effectiveness of tofacitinib with biological therapy as initial treatment in adults with rheumatoid arthritis after failure to methotrexate. METHODS: We used an economic evaluation, Markov simulation model to compare, with different time horizons (1, 2, 3, 5, 10, and 20 years), cohorts of patients with tofacitinib as initial therapy, compared with adalimumab, certolizumab, etanercept, golimumab or infliximab. All the patients failed recent systemic treatment with methotrexate. The characteristics of the patients included: age, weight, initial HAQ score, and clinical response to short and long term treatment, based on all available randomized controlled trials and other options, where appropriate. All values in 2012 Colombian pesos (1 US$ = COP=1800) were obtained locally, using official databases for drug costs, and tariff manual (ISS 2001+30%) for procedures and complications. HAQ scores were used to calculate utilities, measured in QALYs. Annual discount rate was 7% (base case scenario). The ICUR based on total cost was $25.51 for adalimumab, $26.96 for certolizumab, $25.74 for etanercept, $25.63 for golimumab, $22.71 for tofacitinib. Tofacitinib presented a 16% share, in terms of ICUR, of the average coverage of biological therapy in the first year, with equivalent or slightly better QALY gain ($0.62 vs. 0.61). Cost savings and utility gained were maintained, and dominance was attained in more than 50% of Monte Carlo trials in the different time horizons and against alternative comparators. CONCLUSIONS: Based on the results of this analysis, a treatment strategy initiating with tofacitinib is a cost-saving alternative compared with biological therapy as initial treatment in the analysis setting at least the same average effectiveness in all the different time horizons considered.