52,448) for MTX, US 93,992 (89,366–98,982) for abatacept, and US$73,100 (68,539–81,871) for infliximab. The total QALYs gained (discounted) by MTX, abatacept, and infliximab during the same period were: 2.96 (2.89–3.03), 4.05 (3.85–4.30) and 3.26 (3.16–3.39) respectively. The Incremental Cost-Effectiveness Ratio was US$ 98,360 (85,608–100,111) for Abatacept compared to MTX compared to US$ 77,790 (62,369–98,124) per QALY gained with infliximab. CONCLUSIONS: The use of abatacept is more cost-effective than the use of infliximab, both compared to MTX, in patients with Rheumatoid Arthritis with IR MTX in Venezuela.

PMS22 COST-EFFECTIVENESS ANALYSIS OF ETANERCEPT IN THE TREATMENT OF RHEUMATOID ARTHRITIS IN MEXICO
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OBJECTIVES: Rheumatoid Arthritis (RA) critically impair the quality of life of patients. Biologic treatments represent a therapeutic alternative for patients who failed disease-modifying antirheumatic drugs. However, their high cost is a challenge for clinicians and decision makers. The aim of this study was to assess the cost-effectiveness of biologic alternatives to treat RA currently available in Mexico, from an institutional perspective. METHODS: A decision-tree model was developed to simulate the clinical course of patients treated with etanercept (reference treatment), adalimumab, infliximab, tocilizumab or rituximab as first-line therapies, as well as second-line therapies for severe post-therapy continuation failure. Clinical data was extracted from published literature, while costs were collected from Instituto Mexicano del Seguro Social (IMSS) official databases. Probabilistic sensitivity analyses were done through Monte Carlo simulation second-order approach. RESULTS: The effectiveness of therapies resulted in [ACR70, QALY] = [31.3%, 0.79], adalimumab [18.1%, 0.77], infliximab [12.8%, 0.77], tocilizumab [21.1%, 0.77] and rituximab [11.9%, 0.75]. Expected mean costs per patient were: US$12,914.36 [95%CI US$12,901.58-US$12,927.08], US$15,715.06 [95%CI US$15,699.73-US$15,730.39], US$14,479.96 [95%CI US$14,465.77-US$14,494.16], US$14,445.03 [95%CI US$14,411.53-US$14,498.53] and US$17,250-US$17,284.53, respectively. Etanercept was the most cost-effective alternative: US$31,504.80 less than tocilizumab (the most cost-effective alternative) and 19.3% more patients met the ACR70 criteria regarding rituximab (the less effective alternative). Acceptability curves showed that etanercept regardless willingness to pay would be the most cost-effective biologic. CONCLUSIONS: Due to their lower costs and favorable effectiveness profile, etanercept is dominant over other biologic therapies in the management of RA at IMSS.

PMS23 COST-EFFECTIVENESS ANALYSIS OF ANALGESIC THERAPY FOR POSTOPERATIVE PAIN AFTER TOTAL HIP ARTHROPLASTY IN MEXICO
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OBJECTIVES: Unusual analgesia in postoperative pain (POP) raises hospitalization costs and increases the burden of several surgeries with a meaningful impact over patient’s quality of life. The objective of this study was to develop an economic analysis to evaluate parecoxib, ketorolac and morphine in the treatment of POP in patients who underwent total hip arthroplasty from an institutional perspective. METHODS: A cost-effectiveness analysis was developed using a Bayesian decision-tree model, to simulate costs and effectiveness outcomes over the postoperative hospitalization period (15 days). Comparators were multimodal analgesics: morphine (52 mg/day) plus parecoxib (40 mg/day), morphine (52 mg/ day) plus ketorolac (80 mg/day) and morphine (57 mg/day) alone. Effectiveness measures were percentage of treatment response without adverse events (AE) meeting the highest score of the patient’s global evaluation survey (excellent). Effectiveness data and transition probabilities were collected from international published literature. Resource use and cost data was gathered from hospital records. RESULTS: Forty-eight relevant and recently published osteoporosis cost-effective- ness models were identified. Model structures were cohort Markov (56%) and individualized microsimulations (44%). Most models (35) used a lifetime timeframe with patients over 60 kg were included in the sensitivity analysis. The effectiveness of therapies resulted in [ACR70, QALY] = [79%, 0.79], ketorolac (79%), and hormone replacement therapy (10%). In 98% of patients who underwent total hip arthroplasty. This information could be useful for developing markets healthcare institutions in order to establish efficient analgesics improving current health outcomes.

PMS24 THE COST EFFECTIVENESS OF STRONTIUM RANELATE VERSUS RISEDRONATE, RALOXIFENE, IBANDRONATE, ALENDRONATE AND CALCITONIN IN THE TREATMENT OF POSTMENOPAUSAL OSTEOPOROTIC WOMEN IN TURKEY
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OBJECTIVES: The goal of this study was to estimate the cost-effectiveness of strontium ranelate in the treatment of postmenopausal osteoporotic women in Turkey. METHODS: A validated Markov microsimulation model with a Turkish women’s quality-adjusted life-year (QALY) was employed. Clinical data was extracted from published literature, while costs were collected from Turkish private and public hospitals. Probabilistic sensitivity analyses were done through Monte Carlo simulation second-order approach. RESULTS: Strontium Ranelate provides the highest gain of quality life years and is the superlative therapeutic choice with respect to QALY. According to it’s cost and effectiveness value, strontium ranelate was dominant (i.e. more effective and less costly) versus ibandronate and calcitonine for postmenopausal osteoporotic women (US$25,149/QALY gained). The cost per QALY gained for strontium ranelate compared to ibandronate was $5,582 and calcitonine was $3,943. Compared to alendronate, risedronate and raloxifene, strontium ranelate was cost-effective (i.e. more costly but more effective). CONCLUSIONS: The results of this study suggest that strontium ranelate is a cost-effective strategy, in a Turkish setting, for the treatment of postmenopausal osteoporotic women.

PMS25 COST-EFFECTIVENESS OF ABATACEPT OR INFlixIMAB IN RHEUMATOID ARTHRITIS IN COLOMBIA
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OBJECTIVES: Determine the cost-effectiveness of abatacept or infliximab in patients with rheumatoid arthritis (RA) with inadequate response to methotrexate (MTX, Exchange rate: $1,920 Colombian peso–1 US Dollar). A 10-year time horizon and the payer’s perspective were assumed. Costs and health outcomes were discounted at 3% annually. Univariate and probabilistic sensitivity analyses were performed to assess the robustness of the results of the model. RESULTS: In a hypothetical cohort of 1,000 patients with RA – IR MTX in Colombia. METHODS: A previously validated model and clinical data from published literature were used for the analysis. The functional disability was assessed using the Health Assessment Questionnaire (HAQ). A HAQ score was randomly assigned pre-treatment based on the prevalence of the disease and the demographic characteristics for Colombia, then projected over time using the efficacy results from published trials. Direct medical costs were calculated from private and public hospitals, and the information system of the Ministry of Social Protection (SISMED) and validated with local expert estimates (Exchange rate: $1,920 Colombian peso–1 USD). A 10-year time horizon and the payer’s perspective were assumed. Costs and health outcomes were discounted at 3% annually. Univariate and probabilistic sensitivity analyses were performed to assess the robustness of the results of the model. OBJECTIVES: In patients with RA – IR MTX in Colombia, the use of abatacept is more cost-effective than the use of infliximab, both compared to MTX.

PMS26 COST-EFFECTIVENESS MODELING IN OSTEOPOROSIS: A SYSTEMATIC LITERATURE REVIEW AND OVERVIEW
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OBJECTIVES: To conduct a structured review of the recent osteoporosis cost-effectiveness modeling literature and provide an overview of their methodologies and approaches. METHODS: A detailed systematic review was performed of the following literature databases: MEDLINE, MEDLINE-In Process, EMBASE, Cochrane, NEED, SCOPUS, and Scopus. Using pre-selected inclusion/exclusion criteria, relevant studies published since January 2005 were identified. Relevant information from each identified study was extracted according to a predefined grid and essential features of each osteoporosis cost-effectiveness model were recorded. RESULTS: Twenty-eight relevant, recently published osteoporosis cost-effectiveness models were identified. Model structures were cohort Markov (56%) and individualized microsimulations (44%). Most models (35) used a lifetime timeframe (i.e., death or ≥ age 100). The primary investigations were bisphosphonates (79%), raloxifene (15%), and hormone replacement therapy (10%). In 98% of
the models hip fracture was a specific outcome, 94% contained vertebral fractures, and 77% contained wrist/forearm fractures. Eleven models incorporate at least one extraskelatal effect on cost and survival (including breast cancer, coronary heart disease, venous thromboembolism, stroke, and colorectal cancer). Thirty-two (32) of the 48 publications (67%) assumed 100% compliance or do not directly mention model compliance. The majority of the models take the approach that there was discontinuation and non-compliance in the clinical trials, and that the treatment efficacy rates sourced from the clinical trials are underestimated due to the use of an assumed persistence effect. CONSOLIDATIONS: The current state of osteoporosis modeling favors a non-cohort Markov approach, with individualized, i.e., microsimulation methodology being increasingly utilized as extraskelatal effects are incorporated. Treatment compliance and extraskelatal effects are extremely important in modeling real-world scenarios, yet they are not incorporated into the majority of the published models. Modeled treatment effectiveness should be properly imputed to account for the intention-to-treat impact of RCT-reported values as well as the reduced benefits of treatment noncompliance.

PMS27
A COST-EFFECTIVENESS ANALYSIS FROM AN INSTITUTIONAL PERSPECTIVE TO COMPARE ZOLEDRONIC ACID WITH STANDARD CARE IN THE PREVENTION OF HIP FRACTURES IN PATIENTS WITH OSTEOPOROSIS
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OBJECTIVES: Because of its prevalent condition and its association with hip fractures in the elderly population, Osteoporosis has become a major concern for health authorities in recent years. The objective of this study is to evaluate the most cost-effective alternative for preventing hip fractures in osteoporosis patients in Mexico. METHODS: A cost-effectiveness analysis was performed within an institutional setting (Mexican Institute of Social Security, IMSS). Patients were categorized into 2 groups by age: group A was comprised with patients aged 60 to 79 years, and group B patients aged ≥80 years. The standard of care (SOC) for each group used was all bisphosphonates available in the National Formulary: risedronate, oral alendronate, generic alendronate, and ibandronate. Resource use data was obtained from published studies; total direct costs of osteoporosis and hip fractures were used. The source of the unit costs was the institution, current 2006. All costs are expressed in local currency (Mexican Pesos, MX$). The time horizon was 10 years, a discount rate of 3% was used. Effectiveness data was obtained from published studies, the measure used was hip fractures prevented. A probabilistic sensitivity analysis was obtained through a Monte Carlo simulation with 100,000 iterations in the weakest credible parameters. RESULTS: In both groups, zoledronic acid was the most cost-effective treatment. In group A, the C/E ratio was $221.43 MX$, compared with $270.77 for generic alendronate, $332.50 for ibandronate, $340.24 for risedronate and $353.32 for oral alendronate. Likewise, in group B the C/E ratio for zoledronic acid was $574.50, as compared to $797.77 for generic alendronate, $941.52 for ibandronate, $961.38 for risedronate, and $993.89 for oral alendronate. The sensitivity analysis confirmed the robustness of the model. CONCLUSIONS: From an institutional perspective, zoledronic acid is the most cost-effective alternative for the prevention of hip fractures in patients with osteoporosis in Mexico.

PMS28
COST-EFFECTIVENESS ANALYSIS OF NSAIDS FOR SYMPTOMATIC TREATMENT OF RHEUMATOID ARTHRITIS AND OSTEOARTHRITIS
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OBJECTIVES: High costs of rheumatoid arthritis (RA) and osteoarthritis (OA) due not only to high morbidity, disability and mortality levels, but also basis medications and treatment of adverse events which are very expensive. METHODS: We analyzed the efficacy and safety data from randomized clinical trials and systematic reviews of symptomatic treatment OA and RA patients with meloxicam and diclofenac. We were searching data on: www.cochrane.org, www.pubmed.gov, www.clinicaltrials.gov. A model “decision tree” was built on two information sources: 1) literature review; 2) cost databases. We calculated the costs of one serious cardiovascular thromboembolic adverse event and one serious gastrointestinal adverse event in Ukraine. We determined the CER based on costs from our “decision tree” model and data from the IMPROVE study. RESULTS: Direct costs: non-surgical costs of thromboembolic and gastrointestinal adverse event were USD$590.29 and USD$613.81 (1 USD$ = 7.95 UAH on 10.01.2011), respectively. Direct costs of 60 days symptomatic treatment of 100 RA or OA patients with meloxicam 7.5 mg daily and diclofenac 100 mg daily were USD$2057.99 and USD$4689.22, respectively. CER meloxicam was calculated 30.72 and CER diclofenac - 117.34. The one-way sensitivity analysis performed with the most relevant variables confirmed this tendency. CONCLUSIONS: Results show that Meloxicam 7.5 daily is a more economical effective versus diclofenac 100 daily mg for symptomatic treatment of RA and OA patients taking into account probability of serious cardiovascular thromboembolic and gastrointestinal adverse events.

PMS29
COST-UTILITY ANALYSIS OF COLLAGENASE CLOSTRIDIUM HISTOLYTICUM, LIMITED FASCIOCTOMY, AND PERCUTANEOUS NEEDLE FASCIOCTOMY IN DUPUYTREN’S CONTRACTURE
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OBJECTIVES: To assess the cost-effectiveness of limited fasciectomy (LF), percutaneous needle fasciectomy (PNF), and collagenase clostridium histolyticum (CCH) for the treatment of Dupuytren’s contracture. METHODS: A Markov model was developed to simulate Dupuytren’s contracture progression and estimate clinical/economic implications of LF, PNF, and CCH treatments from a US healthcare payer perspective. Transition probabilities were assumed to follow a beta distribution and were estimated based on results from randomized, clinical trials. Health state utilities were assigned to each health state and outcomes were discounted at 3% per annum and reported in 2008 Canadian dollars. Primary outcomes evaluated included incremental cost-effectiveness ratios. RESULTS: Of the 3 treatment decisions, LF was the least cost-effective strategy since the incremental QALYs were projected to be $247 and $1844 compared to LF, respectively. An expected difference of 0.1 and -0.04 quality-adjusted life years (QALYs) were projected for PNF and CCH relative to LF, respectively. In the one-way sensitivity analysis, the model was sensitive to direct cost of LF with a break-even point of $2000 compared to PNF. The cost-effectiveness curve showed that LF had a higher probability of being cost-effective compared to other treatment modalities across a WTP threshold of $0 to $5000. CONCLUSIONS: Across a WTP threshold between $0 and $5000, LF was the most cost-effective therapy for the treatment of Dupuytren’s contracture compared to PNF and CCH, however, the cost of surgery was sensitive in our model which may vary from site to site.

PMS30
COST-UTILITY ANALYSIS OF DENOSUMAB VS STANDARD CARE IN THE TREATMENT OF POST-MENOPAUSAL OSTEOARTHRITIS IN PORTUGAL
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OBJECTIVES: To estimate the cost-effectiveness of denosumab vs. the most commonly used therapy (alendronate = colecaciflor) in treatment of post-menopausal osteoporosis (PMO) in Portugal. METHODS: A Markov cost-utility life-cycle model with six states and nine years was developed. The analysis was undertaken from a National Health Service (NHS) perspective. Efficacy data for denosumab was taken from the FREEDOM randomized double-blind clinical trial and for the comparator from a meta-analysis conducted by NICE. Epidemiological data were derived from Portuguese sources and complemented with Swedish data whenever the former were unavailable. Resource use data were collected through a modified Delphi panel of Portuguese experts (including rheumatologists, GPs and orthopedic surgeons). Resources were valued using various national sources on unit costs. EQ-SD decrements per patient were based on the international literature. Expected persistence differences between treatments were also considered. Deterministic sensitivity analysis was conducted on key variables (including costs, utilities, impact of fractures on mortality, non-inclusion of sub-optimal persistence, comparator’s price, age and T-score for treatment initiation). Probabilistic sensitivity analysis was performed on the model’s treatment effects, fracture costs, EQ-SD fracture decrements and persistence rate differences. RESULTS: Considering an annual NHS cost of €382.20 for denosumab, the estimated ICER was €14,487 per QALY gained. The model predicts that, relative to the comparator, denosumab would be cost-effective vs. 22 vertebral, 1 non-vertebral fracture and 1 other osteoporotic fracture events, per 1000 patients, over a 10 year period. Deterministic sensitivity analysis identified the absence of a persistence effect and the use of generic alendronate price as the most sensitive parameters (22,906, 20,817 €/QALY, respectively). The probability of cost-effectiveness was ranged between 96% (williging-to-pay thresholds of 0 and 20,000 €/QALY, respectively). CONCLUSIONS: Results from the model suggest that, compared to the most commonly used strategy (alendronate = colecaciflor), denosumab is a cost-effective therapy in the treatment of PMO in Portugal.

PMS31
TITLE: THE RELATIVE COST-EFFECTIVENESS OF THE MOST COMMON NECK PAIN TREATMENTS FOR NECK PAIN
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OBJECTIVES: A major challenge facing policy makers is the lack of economic evidence to guide their decisions about allocating health services for neck pain. Our objective was to evaluate the cost-effectiveness of the most commonly used neck pain treatments in Canada and the United States. METHODS: We conducted a cost and direct costs with a decision analytic model of the neck pain exercise, cyclooxygenase-2 selective inhibitors, manipulation, inhibition, and nonsteroidal anti-inflammatory drugs (NSAIDs) using a lifetime horizon and adopting a health care system perspective. Model inputs included: estimates of the course of neck pain; background risk of adverse events in the general population; treatment effectiveness and risk of cerebrovascular, cardiovascular, and gastrointestinal adverse events; quality-of-life weights elicited from neck pain patients using the standard gamble, and direct and out-of-pocket costs. Costs were expressed in 2010 Canadian prices. The impact of beneficial and harmful treatment effects on health were expressed in quality-adjusted life years (QALYs). Cost-effectiveness was estimated with the incremental cost-effectiveness ratio (ICER). The probability that a given treatment was cost-effective was determined using a willingness-to-pay (WTP) threshold of $50,000 per QALY. RESULTS: Under a conven-