

OSTEOPOROSIS**POS1****USING A BUDGET IMPACT MODEL TO PREDICT FIRST-YEAR USE OF A NEW OSTEOPOROSIS THERAPY**Sasser A¹, Rousculp MD², Birnbaum H¹, Moynour E¹, Wu EQ¹, Marcus R²¹Analysis Group, Inc, Boston, MA, USA; ²Eli Lilly and Company, Indianapolis, IN, USA

OBJECTIVES: To analyze the accuracy of an AMCP budget impact model designed to forecast the first-year use of a new osteoporosis therapy in a managed care/pharmacy benefit setting and describe characteristics of patients who initiated therapy. **METHODS:** Following AMCP guidelines, a model was developed to predict first-year (2003) use and treatment costs for a new osteoporosis therapy (teriparatide) using plan characteristics (total number of insured lives, age and sex distribution) as model inputs. Using administrative claims data from an employer database (n = 3.5 million), predicted versus actual use and treatment costs were compared for eight health care plans of varying types (indemnity, PPO, POS, HMO). Demographic characteristics and medical histories of patients initiating the new therapy were compared to other osteoporosis patients in the database (ICD-9 CM = 733.0x). **RESULTS:** The model predicted a total of 131 patients would initiate therapy; the actual number was 133. The number was overestimated in four plans with the margin of error ranging from +113% (34 predicted vs. 16 actual) to -30% (40 predicted vs. 57 actual). The difference in predicted versus actual treatment costs ranged from -\$19,527 to +\$103,315. Patients initiating the new therapy were on average older compared to other osteoporosis patients (P < 0.001). In the year prior to initiating the new therapy, these patients also had more outpatient, inpatient, office, and prescription drug claims per month and were more likely to have seen a specialist or have had an osteoporotic fracture compared to other osteoporosis patients (P < 0.001). **CONCLUSION:** AMCP-style models for newly approved therapies can provide important insight to health plan administrators when making formulary decisions during the initial year of therapy availability. Updating such models by incorporating inputs based on patient characteristics and actual first-year use of therapy may yield more accurate estimates of future use and treatment costs.

POS2**ALENDRONATE AND HORMONE REPLACEMENT THERAPY (HRT) IN THE PREVENTION OF OSTEOPOROTIC FRACTURE IN THE DEPARTMENT OF DEFENSE (DOD): AN ANALYSIS USING NET-BENEFIT REGRESSION**Tiller KW¹, Rascati KL², Wilson JP²¹Department of Defense Pharmacoeconomic Center, Fort Sam Houston, TX, USA; ²University of Texas, Austin, TX, USA

OBJECTIVES: Objectives were: 1) to determine the effectiveness of osteoporosis medications; 2) to identify risk factors and other covariates that predict osteoporotic fractures; and 3) to determine the cost-effectiveness of osteoporosis medications. **METHODS:** A retrospective cohort study was conducted using DOD claims from fiscal years 2000 to 2003. Using an intent-to-treat study design, a total of 49,851 women \geq age 50 were followed. Differences in effectiveness (fracture/no fracture) were determined by both logistic and direct Cox proportional hazard regressions. To assess cost-effectiveness, a net-benefit regression method was employed. **RESULTS:** Findings showed that the three-year cumulative incidence of an osteoporotic fracture in this cohort was 2.5% (0.4% in patients without an osteoporosis diagnosis; 6.1% in patients with an osteoporosis diagnosis).

The medication effectiveness results obtained from both regression models were consistent and suggested that women treated with the combination of alendronate and HRT were at lower risk for any fracture, hip fracture, and vertebral fracture when compared to no treatment, while comparisons of the individual medications with no treatment did not show a significant decrease in risk. Variables that significantly increased the risk of fracture were: prior fracture, increasing age, and oral corticosteroid use \geq year. The net-benefit regression showed that the use of osteoporosis medications was not cost-effective overall in the short-term compared to no treatment. However, among high-risk populations, such as patients with a prior osteoporotic fracture or those \geq 65, medications became more cost-effective. **CONCLUSIONS:** Combination therapy with HRT and alendronate was more effective than no treatment in DOD women \geq 50. None of the treatment options were cost-effective in the short-term for the overall population, but some were more cost-effective in subsets of high-risk patients. The results of this study were potentially influenced by the presence of selection bias, therefore propensity scoring will be conducted.

POS3**COST-EFFECTIVENESS ANALYSIS OF BIPHOSPHONATES AND RALOXIFENE FOR TREATMENT OF OSTEOPOROSIS AND PREVENTION OF FRACTURES**Lau TC¹, Lim BP², Li SC³¹Tan Tock Seng Hospital, Singapore; ²National Health Care Group, Singapore; ³National University Singapore, Singapore

OBJECTIVES: To estimate the cost-effectiveness of bisphosphonates (Alendronate, Risedronate and cyclical Etidronate) or Raloxifene versus no therapy over a two-year treatment period in patients with osteoporosis and in those with previous fragility fracture. **METHODS:** A decision analytic model using local cost data and clinical data from meta-analysis or randomised controlled trial was developed to evaluate cost-effectiveness of the various interventions. The main perspective of the economic evaluation was that of health care purchaser. Therefore, only direct health care costs were considered in the evaluation. A two-year time horizon was chosen as clinical data about the efficacy of the various interventions considered are available. **RESULTS:** The results of the evaluation showed that it is not cost-effective to treat all patients. However, the analysis performed did not consider indirect and intangible cost due to the perspective used in the evaluation. Alendronate and cyclical etidronate appeared to be the most cost-effective agents to prevent hip fracture and vertebra fracture respectively. The ranking and magnitude of the incremental cost-effectiveness ratio of the various treatments did not change by the sensitivity analyses using the 95% CI of the efficacy data. **CONCLUSION:** If treatment is indicated, it would be prudent to consider cyclical etidronate if the risk of hip fracture is low. Raloxifene can be considered if patient will benefit from other non-osteoporosis indication in this group of patients. However, in patients who have high risk of hip fracture, alendronate or risedronate will be more cost-effective.

POS4**FACTORS AFFECTING THE BONE DENSITY TEST PRESCRIBING FOR OSTEOPOROSIS IN MALE AMBULATORY PATIENTS**

Rahman A

Shenandoah University, Winchester, VA, USA

OBJECTIVES: Male osteoporosis is traditionally under-diagnosed. In the US, two-million men have osteoporosis and