OSTEOPOROSIS

USING A BUDGET IMPACT MODEL TO PREDICT FIRST-YEAR USE OF A NEW OSTEOPOROSIS THERAPY
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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/pothealth plan 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 healthcare 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 113% (34 predicted vs. 16 actual) 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.

ALENDRONATE AND HORMONE REPLACEMENT THERAPY (HRT) IN THE DEPARTMENT OF DEFENSE (DOD): AN ANALYSIS USING NET-BENEFIT REGRESSION
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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 aged 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 >= 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 >= 65, medications became more cost-effective. CONCLUSIONS: Combination therapy with HRT and alendronate was more effective than no treatment in DOD women >= 30. 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.

COST-EFFECTIVENESS ANALYSIS OF BIPHOSPHONATES AND RALOXIFENE FOR TREATMENT OF OSTEOPOROSIS AND PREVENTION OF FRACTURES
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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.

FACTORS AFFECTING THE BONE DENSITY TEST PRESCRIBING FOR OSTEOPOROSIS IN MALE AMBULATORY PATIENTS
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OBJECTIVES: Male osteoporosis is traditionally under-diagnosed. In the US, two-million men have osteoporosis and
among the NH elderly population, the majority remained untreated. Increasing age was inversely related to receipt of anti-osteoporotic drugs. Female elderly and those with fewer limitations in daily activities were more likely to receive drug therapy for osteoporosis.

**POS6**

**IMPACT OF AN OSTEOPOROSIS INTERVENTION PROGRAM OF PATIENTS WITH A FRACTURE HISTORY**

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**OBJECTIVE:** To evaluate the impact of an osteoporosis therapy intervention program in a health plan setting. **METHODS:** A clinical team of pharmacists, obstetricians/gynecologists and endocrinologists designed and implemented an educational initiative for physicians and members. Medical and pharmacy claims data for female enrollees over the age of 40 were retrieved for the time period of July, 2002 through June, 2003. Criteria for targeted patients included a fracture history (defined by ICD-9 and CPT codes) and negative history of estrogen/progestin use over the 1-year period, and four-month negative history of osteoporosis therapy (alendronate, risedronate, calcitonin, raloxifene, or teriparatide). Physicians received a patient list, an educational tool for management of osteoporosis and coupons for a free first-month supply of a bisphosphonate. Targeted members received a 17-page handbook highlighting drug treatment, lifestyle modifications, and information regarding prescription drug discount programs. The impact of the intervention was analyzed using pharmacy claims data for eligible patients with pharmacy benefits. Primary outcome measure was defined as the percent of patients with a claim for an osteoporosis agent at three, six, and nine-months post-intervention. Additionally, a member survey was conducted six-months post-intervention to evaluate the member mailing. **RESULTS:** There were 1612 program participants. At three, six and nine-months respectively, 3.76% (32/852), 5.12% (40/781) and 5.97% (42/704) of eligible patients had a claim for an osteoporosis agent. A 23% survey response rate was achieved (364/1612). Survey results indicated 18% of responders were taking prescription osteoporosis medications at that time. Post-intervention, 19% of the responders made a doctor appointment, 15% attended the appointment, 17% received a prescription, 13% received medication samples, and 11% filled the prescription. **CONCLUSION:** Survey results indicate higher rate of medication use compared to claims database analysis, which does not capture medication sampling. Another mailing has been done to continue to improve osteoporosis care.

**POS7**

**VALIDATION STUDY OF THE OSTEOPOROSIS PATIENT SATISFACTION QUESTIONNAIRE (OPSAT-Q)**

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**OBJECTIVE:** Several features of bisphosphonate therapy for osteoporosis may influence patient satisfaction, including dosing convenience. The objective of this study was to evaluate the psychometric characteristics of the Osteoporosis Patient Satisfaction Questionnaire (OPSAT-Q), which assesses patient satisfaction with osteoporosis treatment. **METHODS:** Patient focus groups and cognitive debriefings informed the development of the 16-item OPSAT-Q, which contains four subscales: Convenience, Confidence with Daily Activities, Side Effects and Overall Satis-