after primary treatment. METHODS: Data derive from the financial database of the National Health Insurance Fund Administration (OEP) and based on the S7200 ICD code and Diagnosis Related Groups 371A,B,C,H,K 374A,B,C and 375A,B,C. Patients with polytrauma or severe comorbidities were excluded from the study. Our retrospective analysis includes patients with femoral neck fracture identified with Social Security Identification number (TAJ) and discharged in 2000. We calculated the cost of acute and chronic hospital care, outpatient care and sick-pay. The following exchange rate was used: 1 Euro (EUR) = 253.23 Hungarian Forint (HUF).

RESULTS: Altogether 518 patients were included into the study. The average cost per patient (for both with and without complications) was as follow. Acute inpatient care: arthroplasty 1337 EUR, screw fixation 1033 EUR, DHS: 925 EUR. Chronic inpatient care: arthroplasty 24 EUR, screw fixation 75 EUR, DHS: 52 EUR. Sick-pay: arthroplasty 896 EUR, screw fixation 994 EUR, DHS: 914 EUR. Outpatient care: arthroplasty 21 EUR, screw fixation 51 EUR, DHS: 39 EUR. Total health insurance expenditures were: arthroplasty 2299 EUR, screw fixation 2153 EUR, DHS: 1930 EUR. Total health insurance expenditures per patient with complications were: arthroplasty 3063 EUR, screw fixation 3971 EUR, DHS: 2481 EUR. Total health insurance expenditures per patient without complications were: arthroplasty 2215 EUR, screw fixation 1743 EUR, DHS: 1813 EUR. The rate of further treatment was arthroplasty 8.3%, screw fixation 18.4%, DHS: 14.7%.

CONCLUSIONS: We found the highest cost in patients with complications in screw fixation, while patients without complications in arthroplasty. In both cases (with and without complications) dynamic hip screw had the lowest cost.

THE COST-EFFECTIVENESS OF IBANDRONATE IN THE TREATMENT OF POSTMENOPAUSAL OSTEOPOROSIS IN THE US

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OBJECTIVES: We determined the cost-effectiveness of monthly ibandronate compared to weekly bisphosphonate (BP) treatments for women in the US, age ≥50 years, with prevalent radiologic vertebral deformity and hip BMD T-score ≤−2.5.

METHODS: A Markov model was developed to evaluate the lifetime cost-effectiveness of monthly ibandronate and weekly BPs. Vertebral, hip, and wrist fracture efficacy were assigned a bisphosphonate class effect as estimated by the literature. Persistence with weekly BPs was evaluated at rates reported from observational studies (36% at year 1, 24% for years 2 through 5). Fifty-percent relative improvement in persistence (54% at year 1, 36% for years 2 through 5) among women receiving ibandronate was assumed based on previous improvements in persistence for weekly BPs. Both fracture risk and mortality were allowed to increase as patients aged. Yearly drug costs were referenced to wholesale acquisition costs for each BP. Direct health resource costs for fracture states were estimated from published literature and discounted 3% per annum. All costs were reported in 2004 US$. RESULTS: More fractures were avoided (vs. no treatment) with monthly ibandronate (94.13 per 1000 women) than with weekly BPs (57.57 per 1000 women), resulting in low lifetime fracture care costs/woman ($6726 and $6918, respectively). Five-year drug costs/patient were $1138 with weekly BPs and $1576 under conditions of improved persistence with monthly ibandronate. The incremental cost per quality-adjusted life year gained (vs. no treatment) was lower with monthly ibandronate ($26,725) compared to weekly BPs ($31,601). Changing assumptions in the model to that of previously published cost-effectiveness models produced similar results, providing external validity for this model. CONCLUSION: Ibandronate is a cost-effective intervention for the treatment of postmenopausal osteoporosis. Incremental persistence with BP therapy thus improves the benefit realized in patient populations. These benefits include fewer fractures for patients with significant increases in costs to payers.

COST OF FALLS IN LONG-TERM CARE FACILITIES (LTCFs)

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OBJECTIVE: To estimate the cost of falls in LTCFs.

METHODS: The study employed a non-randomized, before and after comparison with control group design. A multi-facility long-term care company provided data from residents institutionalized between January 1, 2002 and October 30, 2004. Data included Minimum Data Set (MDS) observations, Resource Utilization Group (RUG) classifications, and demographics. An index date was assigned to each resident to identify pre- and post-periods. The index date was defined as the date of the first fall for fallers and as the date of the fifth MDS measurement for non-fallers. Direct medical cost estimates were based on MDS measures of hospital, emergency room, and physician utilization and on average Medicare reimbursement rates. Costs related to changes in resident functioning were estimated from RUG payment rates. Total reimbursement per resident per day (PRPD) was calculated as the sum of RUG and medical service reimbursements. Fall-related costs were estimated by comparing between-group differences in pre- to post-index period changes in reimbursement. Regression analysis was used to control for between-group differences. The dependent variable was the natural log of post-period total reimbursement. Independent variables included group, pre-period reimbursement, post-period length of stay, age, gender, race, and severity of illness as measured by a modified Charlson Comorbidity Index. RESULTS: The sample included 1298 fallers and 1509 non-fallers. Fallers had substantially more fractures and higher medical services utilization in the post-period than non-fallers. Total reimbursement for fallers decreased from $107 to $37 PRPD compared to a decrease from $98 to $24 for non-fallers. Regression analysis indicated that reimbursement in the post-period was 40% higher for fallers than non-fallers after controlling for demographic and disease differences and pre-period reimbursement. CONCLUSION: Falls in LTCFs result in substantial costs, primarily due to higher hospitalization rates.

CHANGES IN THE IMPAIRED ABILITY TO WORK IN PATIENTS UNDER 60 WITH MEDIUM FEMORAL NECK FRACTURE DURING 3 YEARS FOLLOW UP

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OBJECTIVES: The aim of the study is to analyze on a 3 years follow up the 50–100% impaired ability to work related to medial fracture of femoral neck of patients in active age group regarding the surgical methods, the progressivity level of the primary treatment, rehabilitation care, age group and residence of patients, and the possible complications. METHODS: Data derive from the database of the National Health Insurance Fund Administration and based on the ICD-10 code S7200 (femoral
neck fracture) and the Hungarian Diagnosis Related Groups. Patients with polytrauma or severe comorbidities were excluded. Our retrospective analysis includes patients under 60 with femoral neck fracture identified with Social Security Identification number (TAI) and discharged in 2000. RESULTS: A total of 518 patients met the selection criteria and 23.7% of them (N = 123) had impaired ability to work. The proportion of patients with impaired ability to work was 41.3% in patients with further treatment, 50% in patients with secondary prosthesis and 20% in patients with one definitive treatment. The proportion of patients with impaired ability to work according to the method of primary surgery was 27.1% in arthroplasty, 23.7 in screw fixation and 20.6% in DHS. A total of 16.3% of disabled patients received rehabilitation treatment. The proportion of disabled patients increased in higher age groups. We found higher than national average disability ratio in regions with higher unemployment rate and lower employment rate. CONCLUSIONS: We found higher impaired ability to work ratio in patients with further treated and in arthroplasty. In order to reduce the impaired ability to work, the sick-pay period should be used more efficiently. The frequency of impaired ability to work is not only a health related problem but it is an effect of social and economic processes.

OSTEOPOROSIS—Health Care Use & Policy Studies

PRICE AND UTILIZATION OF OSTEOPOROSIS MEDICATIONS IN U.S. MEDICAID PROGRAMS

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OBJECTIVES: Approximately eight million women and two million men in the U.S. suffer from osteoporosis, a disease that causes over 1.3 million fractures each year. The cost to Medicaid for anti-osteoporosis medications topped $85 million in the first quarter of 2004. The objective of this study is to analyze price, cost, utilization, and market shares of oral anti-osteoporosis medications in U.S. Medicaid programs, with the specific purpose of assessing interbrand competition in a tightly oligopolistic market. METHODS: There are five oral medications for osteoporosis, including Didronel® (etidronate), Skelax® (tiludronate), Acteonel® (risendronate), Fosamax® (alendronate), and Evista® (raloxifene). Data from the First DataBank® were used to calculate the monthly Average Wholesale Price (AWP) per daily dose for each drug over the period 1990–2004. Data from the National Medicaid Pharmacy claims were used to calculate quarterly drug prescriptions, market shares, and reimbursements over essentially the same time period. RESULTS: The three most frequently prescribed drugs are alendronate (utilization reached 600,000 scripts in the 1st quarter 2004); risendronate whose use increased from 90 scripts in the 2nd quarter 1999 to 400,000 in the 1st quarter 2004; and raloxifene with utilization of 190,000 scripts in the 1st quarter 2004. Each of these drugs has an AWP per daily dose in the $2.00 to $4.00 range. Interestingly, the Medicaid cost per prescription for risendronate decreased from $300 in 1999 to $80 in 2004. Though not widely prescribed, the AWP for tiludronate is much higher than for its competitors at $15.00 per daily dose. CONCLUSIONS: There is no indication that market shares or prices of branded medications are responding to new entry in the anti-osteoporosis drug market. Movement in prices and utilization are driven much more by dosage and compliance issues.

OSTEOPOROSIS—Methods and Concepts

TRENDS IN THE CLINICAL MANAGEMENT OF FRAGILE FRACTURE BEFORE AND AFTER THE NEW HEDIS OSTEOPOROSIS MANAGEMENT MEASURE IN A MEDICARE POPULATION

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OBJECTIVE: To examine the trend in clinical management of patients with fragile fractures before and after the implementation of the Health Plan Employer Data and Information Set (HEDIS) osteoporosis measure. METHODS: Two cohorts of Medicare Beneficiaries with continuous enrollment for at least 18 months and a fracture during the measurement year and no use of osteoporosis medication or BMD screening in the preceding 12 months were identified in the MarketScan Medicare Supplemental and COB database for the measurement years 2000–2005. Per HEDIS, each measurement year began on July 1st of the preceding year and continues through June 30th of the measurement year. The first cohort consisted of women aged 67 and older, while the second cohort consisted of men and women aged 65 and older. Fractures were identified according to HEDIS definitions. Clinical management was assessed by the presence of a claim for BMD screening and/or a prescription for a bisphosphonate or other osteoporosis-specific medication in the year following the fracture. Adjusted rates of change in screening and treatment were estimated using multivariate logistic regression. RESULTS: In the measurement year 2000, 8.4% of Cohort 1 underwent BMD screening and 11.2% received pharmacological treatment. For Cohort 2, the rates were 6.5% and 8.3%, respectively. By 2005, BMD screening had increased by 21% and treatment increased by 15% for Cohort 1. For Cohort 2, the rates increased by 42% and 22%, respectively. After adjusting for patient age, sex, fracture location, provider specialty, geographic region and capitated versus non-capitated health plan, the rates for screening and treatment had increased by 21% and 15% for Cohort 1, and by 41% and 15% for Cohort 2. CONCLUSION: While slow progress has been made in the clinical management of fracture since the implementation of the HEDIS osteoporosis measure, there is still an opportunity for significant improvement.

OSTEOPOROSIS—Methods and Concepts

TREATMENT PATTERNS AND RESOURCE UTILIZATION IN PATIENTS WITH PAGET’S DISEASE TREATED WITH RISENDRONATE

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OBJECTIVES: After the recommended two-month treatment course of risendronate for the treatment of Paget’s disease, patients should be followed to assess the need for re-treatment. We examined real-world treatment patterns and resource utilization in patients treated with risendronate for Paget’s disease. METHODS: Patients enrolled in a nationally representative, multi-managed care plan claims database (1998–2004; PharMetrics) with a diagnosis of Paget’s disease (>1 ICD-9 code), >1 risendronate prescription at the Paget’s dose (30mg; daily dosing), no osteoporosis, and >1 year of follow-up after initial risendronate therapy were identified. For this cohort, we evaluated: 1) Proportion of patients with risendronate use >1 month after the recommended treatment regimen in the approved label (i.e., additional use); 2) Proportion of patients without risendronate prescription (i.e., gap) from days 61 to 180, followed by use after