OBJECTIVE: This study examined associations between pre and post stroke statin use with health care costs among elderly stroke survivors enrolled in a Medicare Health Maintenance Organization (HMO). METHODS: This was a retrospective analysis of Medicare HMO in the southeastern region of United States. Stroke survivors were identified using primary inpatient discharge codes of 434.xx or 436.xx during the ‘enrollment period’ from January 1, 2000 to December 31, 2002. Patients were required to have at least 2 prescription fills for HMG-CoA reductase inhibitors (statin) and continuous eligibility to the HMO benefits during index period. Medication adherence was calculated using prescription refills. Multivariate log-linear regression analyses were used to determine predictors of health care costs. RESULTS: A total 181 stroke patients with mean age of 74.3 years (SD = 7.6) and over 60% were studied. Over 55.2% patients were on atorvastatin, followed by simvastatin with 24.3%. The average medication possession ratio for statins was 49.6%. Patients reported poor health status and significant comorbidity. In multivariate log-linear regression analyses factors, we found that statin use in the year prior to stroke (27% of the patients) was significantly associated with decreased health care costs (p < 0.05). The only other factor significantly associated with increased health care costs in the post-stroke year was increased comorbidity severity (p < 0.001). CONCLUSION: Statin use in elderly HMO enrolled elderly patients in the pre-stroke period was significantly associated with significant reductions in health care utilization and costs in the post-stroke year. Prophylactic statin use in elderly patients at risk for stroke may be warranted to decrease post-stroke morbidity resulting in significant health care costs.

PCV88
OLD HABITS DIE HARD: A NATIONWIDE UTILIZATION STUDY OF CALCIUM CHANNEL BLOCKERS IN TAIWAN
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OBJECTIVE: To investigate the trend of ambulatory calcium channel blockers (CCBs) utilization in Taiwan according to the national health insurance claims over an eight-year period. Special attention was paid to the extent and situations of prescribing first-line (short-acting) CCBs on a PRN (pro re nata) order. METHODS: The visit-based sampling claims datasets of ambulatory care visits from 1997 to 2004, offered by the National Health Insurance Research Database, were analyzed. The datasets represented 0.2% of total ambulatory care visits within the National Health Insurance in Taiwan. The utilization of CCBs was stratified by ingredient and formulation, and the prescriptions of CCBs on a PRN order by the patient’s age, the prescribing physician’s specialty, and the setting of health care facility. RESULTS: During the study period, the CCBs had remained as the most popular antihypertensive agents in Taiwan. The number of defined daily doses (DDDs) of all CCBs per 1000 inhabitants per day increased from 15.3 in 1997 to 36.4 in 2004. The growth of CCBs was attributed to second- and third-generation CCBs, especially amlodipine. While the first-line CCBs, mainly short-acting nifedipine, became less popular with time (from 6.0 DDDs per 1000 inhabitants per day in 1997 to 3.5 in 2004), their PRN use did not have a diminishing trend. In 2004, the short-acting nifedipine on a PRN order still existed in 1.5% of prescriptions containing antihypertensive agents and 3.4% of prescriptions containing CCBs. More than one half of these PRN orders were prescribed by the internists and to the elderly patients; almost four-fifths of these PRN orders were prescribed during normal consultations. CONCLUSION: The physicians in Taiwan still had the habit of prescribing short-acting CCBs both on regular use and on PRN use. The reason for such practices and the impact on patients’ health deserve attention.

PCV90
DISPARITIES IN MEDICAL EXPENDITURES AND UTILIZATION AMONG HYPERTENSIVE MEN AND WOMEN IN THE UNITED STATES
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OBJECTIVE: To estimate and compare annual medical expenditures and utilization attributed to hypertension in men and women of the U.S. And to investigate predisposing, enabling and need predictors of gender differences in hypertension attributable medical expenditures and utilization. METHODS: Procedural equity was assessed by applying the theoretical framework developed by Aday et.al. We used the 2001–2004 Medical Expenditure Panel Survey (MEPS) and regression models to estimate medical expenditures and utilization. A cross-sectional study design was used and unit of analysis was person-year. The interaction between hypertension and gender was used to study gender differences. We estimated incremental health care utilisations attributed to hypertension as difference in utilization and expenditures between hypertensive and non-hypertensive individuals. Percentage changes in total and attributable utilization and expenditures of hypertensive men relative to hypertensive women were also estimated. RESULTS: Weighted mean total medical expenditure for hypertensive women and men was $5512 and $5266 respectively. However, total expenditure attributable to hypertension for hypertensive women and men was $3272 and $3910 respectively. Therefore, hypertensive men had 19.5% more attributable expenditures relative to hypertensive women. Hypertensive women had significantly more office visits, prescription drug and outpatient visits. However, similar to total expenditure, hypertensive men had 27.3% more office visits, 2.9% more prescription drug, and 10.9% more outpatient visits that is attributable to hypertension than hypertensive women. CONCLUSION: Gender remained significant predictor of resource use even after controlling for predisposing, enabling and need factors. Hypertensive women had more utilization and
expenditures than hypertensive men. However, hypertensive men had more utilization and expenditures attributed to hypertension than hypertensive women. Hypertensive men and women with similar health status and comorbid conditions did not have similar utilization and expenditures regardless of their age, income or insurance status. Thus, according to procedural equity, hypertensive men and women were not being treated equally.

**PCV91**

**PATIENT INSURANCE AND MEDICATION CHOICE FOR HYPERCHOLESTEROLEMIA**

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**OBJECTIVE:** To assess the influence of prescription drug coverage on physician recommendations for hypercholesterolemia treatment, specifically comparing coverage types that employ patient copayments and formulary restrictions with unrestricted coverage. **METHODS:** Respondents from an ongoing web-based survey of 2200 randomly-selected primary care physicians in Florida, Massachusetts, North Carolina and Texas viewed a clinical vignette of a patient with hypercholesterolemia and provided a treatment recommendation. Insurance was randomly assigned as commercial, Medicare Part D, Medicaid, or Medicare-Medicaid dual eligible. Commercial insurance patients had no copayments or formulary restrictions; other patients' copayment and formulary information depended on insurance type. We compared drug choices across insurance groups using chi-square tests and root mean squared deviations (RMSDs).

**RESULTS:** Data from 229 respondents (1942 eligible, 11.8% response rate) were available at time of submission; 53 respondents were randomized to patients with commercial insurance, 59 to Part D, 59 to Medicaid, and 58 to dual eligible. Nearly all physicians (98%) recommended a statin. Respondents were more likely to select a brand drug for commercial insurance patients (66%) than for Medicare 22%), Medicaid (37%), or dual eligible (29%), overall P < 0.001 patients. The most-prescribed brand agent (atorvastatin) was recommended more often and the most-prescribed generic agent (simvastatin) was recommended less often for commercial insurance patients (47%, 30% respectively) than for Medicare (8%, 61%), Medicaid (17%, 51%), and dual eligible (21%, 64%) patients (overall P < 0.001). Drug choices for the Medicaid group (RMSD 13.2) most closely approximated the commercial insurance group's distribution, followed by the dual-eligible (RMSD 15.8) and the Medicare (RMSD 17.8) groups. CONCLUSION: These preliminary data indicate that physicians' drug recommendations for hypercholesterolemia treatment differ by patients' insurance type. In particular, physicians recommended generic drugs more often than brand drugs for patients with drug coverage that uses copayments and formulary restrictions than for patients with unrestricted drug coverage.

**PCV92**

**THE HEALTH AND ECONOMIC IMPACT OF SWITCHING FROM ATORVASTATIN TO SIMVASTATIN IN THE US**

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**OBJECTIVES:** One recent analysis of brand to generic switching patterns in a large, nationally representative pharmacy claims database from January 2005 to June 2006 suggested that 3% of patients taking atorvastatin were switched to simvastatin. However, 38% of these switches were to less potent doses. This analysis sought to assess the long-term impact of this switching pattern in the US. **METHODS:** A Markov model simulated the future cardiovascular health of Americans aged 35–74 years who were initially free of cardiovascular disease (CVD), but who met NCEP-ATPIII criteria for lipid-lowering treatment. Follow-up occurred until age 75 years. Decision analysis was used to compare the effects of prescribing all subjects atorvastatin versus prescribing 97% atorvastatin and 3% simvastatin. Subjects were profiled on participants of the 1999–2004 NHANES. The risks of CVD and death were estimated from application of a Framingham risk equation and derived from US mortality statistics, respectively. The costs of CVD and statins were derived from administrative health care claims data. A uniform 3% annual discount rate was applied. **RESULTS:** The analysis estimated a cohort of 24,037,997 Americans. If all were to be prescribed atorvastatin, 24.0% would be expected to suffer a cardiovascular event and 24.2% to die by age 75. If 3% were to be prescribed simvastatin at the observed pattern, the equivalent figures would be 24.1% and 24.3%, representing an excess of 2317 cardiovascular events and 9987 deaths, respectively. There would be a net cost saving associated with the switch, but at $42,400 per year of life lost and $27,700 per QALY lost. **CONCLUSIONS:** In the US, many patients are being inappropriately switched from atorvastatin to generic simvastatin, which might lead to an increase in cardiovascular events and overall mortality for little health-economic gain.

**PCV93**

**LIFETIME MEDICAL EXPENDITURES AMONG HYPERTENSIVE MEN AND WOMEN IN THE UNITED STATES**

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**OBJECTIVE:** To estimate and compare lifetime (LT) medical expenditure of hypertension among men and women of the United States. **METHODS:** We estimated medical expenditures with cross-sectional data and survival with prospective data, to estimate lifetime expenditures from ages 20 to 85+. The 2001–2004 Medical Expenditure Panel Survey (MEPS) were used to estimate average annual medical expenditures. Total medical expenditure was defined as sum of inpatient stay, emergency room visits, outpatient visits, office based visits, and prescription drugs expenditures. The 1986–2000 National Health Interview Surveys (NHIS) were linked to mortality in the National Death Index through 2002, to estimate survival with discrete time hazard models. A discount rate of 3% was used to estimate the LT medical expenditures. We controlled for hypertension status, gender, age and race and ethnicity while estimating regression models. In addition, interactions between hypertension and other independent variables were controlled to differentiate different levels of medical expenditures and mortality between hypertensive and non-hypertensive individuals. Both total and hypertension attributable expenditures were estimated. **RESULTS:** Expected total LT expenditure for individuals at age 20, was $244,303 for hypertensive men and $259,499 for hypertensive women. But the LT expenditure that could be attributed to hypertension was $133,933 for men and $74,088 for women. Therefore, hypertensive men had about 81% more attributable LT expenditure relative to hypertensive women. Similarly, hypertensive men of age 40 had about 88% more attributable LT expenditure than hypertensive women, and hypertensive men of age 60 had about 93% more attributable LT expenditure relative to hypertensive women. CONCLUSION: Although hypertensive women have more expected LT total expenditure than men, hypertensive men had relatively more expected LT attributable expenditure than women at different ages and the gap widened with age.