with generalized estimating equations were used to estimate the odds of being persistent for each LMD class relative to statins while controlling for patient, plan, and prescription characteristics. **RESULTS:** The overall proportion of patients persistent to therapy in the 1 year after therapy initiation was 11% for BAS (N = 9853), 25% for ER niacin (N = 9404), 32% for fibrates (N = 21,004), 39% for statins (N = 105,178), and 44% for ezetimibe (N = 974). The proportion of patients who were persistent with ER niacin therapy declined from 44% to 30%, 27%, and 24% over the first four quarters after therapy initiation. Similarly, mean PDC for niacin was 68% in Q1, 43% in Q2, 36% in Q3, and 32% in Q4 of the 1 year after therapy initiation. Excepting ezetimibe, multivariate analyses confirmed significantly lower odds of persistence on all LMD classes relative to statins (p < 0.001). **CONCLUSION:** Excepting BAS, we found that ER niacin had the lowest persistence among all LMD classes. Since long-term treatment is generally necessary in persons with dyslipidemia, suboptimal persistence may affect the overall success of LMD therapy.

PCV57

DOES 90-DAY PRESCRIPTION SUPPLY AT RETAIL IMPROVE COMPLIANCE IN A MANAGED CARE SETTING?

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OBJECTIVE: To evaluate the effect of a new program that allowed patients to fill 90-day prescriptions in retail pharmacies. **METHODS:** The research is a case-control natural experiment. A total of 38,852 patients in the treatment cohort received drug benefit through a managed care organization that initiated a 90-day supply retail option in January 1, 2005. Patients were evaluated if they used agents to treat diabetes, dyslipidemia, or hypertension and were continuously eligible for benefit for 18 months—9 months pre- and post-January 1, 2005. The control cohort comprised 49,738 patients who were insured in the same managed care organization, and used the same drugs and were followed for the same length of time the year before and after January 1, 2004. Treatment and control patients were matched on a number of dimensions—including demographic characteristics, copays, and baseline drug consumption—using the weighted sum of absolute case-control differences. The effect of the new 90-day retail program was then evaluated with the matched sample using the difference-in-differences estimator. Two outcomes were evaluated: the number of prescription in the above therapeutic classes and the duration of supply. **RESULTS:** The introduction of 90-day dispensing at retail allowed patients to reduce the number of prescription they filled by an average of 1.2 for diabetes, 2.2 for antilipidemics, and 4.0 for antihypertensives. Despite this reduction, actual total drug supply increased as the average length of supply per prescription increased. Total supply increased by 4.3 days for antihypertensives, 11.5 days for antilipidemics, and by 75.3 days for diabetes. **CONCLUSION:** Reactions to the introduction of a new retail dispensing option demonstrate that dispensing flexibility is valuable to the patients and can lead to improvement in compliance, presumably because refilling a prescription every 30 days can be burdensome.

PCV58

ADHERENCE TO EVIDENCE-BASED STATIN GUIDELINES REDUCES RISK FOR ACUTE MYOCARDIAL INFARCTION WITH AT LEAST 50%.

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OBJECTIVES: We investigated the "real world" effectiveness of statin therapy, focusing on the effect of dose and early treatment discontinuation on the risk for acute myocardial infarction (AMI). **METHODS:** Data were obtained from the PHARMO Record Linkage System including among others linked drug-dispensing records and hospital records for over two million individuals of the Netherlands. New users of statins in the period January 1 1991 until December 31 2004, °Ý18 years of age were included in the study cohort. Exposure to statins, both in terms of persistence and dose, was determined over the first two treatment years. To determine the risk for AMI, patients were followed from this two-year time point until the first hospital admission for AMI, death, or end of the study period (December 31, 2004), whichever was earliest. Patients were classified into two groups according to their risk of cardiovascular disease at the start of outcome follow-up. **RESULTS:** The study cohort included 46,332 low-risk statin users (78%) and 12,762 high-risk statin users (22%). 31,557 patients (53%) discontinued statin use within two years. 20,883 patients (35%) were persistent statin users with an average equipotent dose °Ý4. A 40% reduction in risk of AMI with two-year persistent statin use was observed in low- and high-risk users. The protective effect of statin use increased with a higher equipotent dose; a 25% reduction in risk of AMI with an average equipotent dose °Ü3 and a 60% risk reduction with an average equipotent dose °Ý4. **CONCLUSION:** The results show that statins are suboptimally dosed in real life and used too short for having the maximum benefit in terms of preventing AMI. Our findings corroborate findings from clinical trials insofar that the longer patients are treated and the higher the dose, the more successful the prevention of AMI.

PCV59

LONG-TERM CARDIOVASCULAR OUTCOMES OF COMPLIANCE AND PERSISTENCE WITH HYPERTENSION THERAPY

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OBJECTIVES: While managed care data can be used to assess medication compliance and persistence, these databases generally do not permit observation of long-term outcomes. We therefore applied modeling techniques to explore the impacts of compliance and persistence with hypertension therapy on long-term cardiovascular outcomes among managed care hypertension patients. **METHODS:** We analyzed 12-month blood pressure (BP) and compliance/persistence using data for hypertension patients receiving valsartan therapy from the Geisinger Clinic, a U.S. regional healthcare network. Long-term cardiovascular outcomes (myocardial infarction, stroke, coronary artery bypass, angioplasty, and cardiovascular death) were based on algorithms from the Physicians' Health Study (13 years follow-up) and Women's Health Study (7 years) as presented by Glynn et al. (2002). No significant differences were observed

between the compliant/persistent and non-compliant/non-persistent groups for other cardiovascular risk factors (age, diabetes, smoking status, cholesterol, and alcohol). **RESULTS:** Compliant patients (those with medication-possession ratios >80%) had 12-month average systolic and diastolic BP values 3.5 mmHg (p < 0.0005) and 0.5 mmHg (non-significant) lower, respectively, than those of non-compliant patients. Assuming these differences remain over time, the Glynn algorithms predict a 4.6% decrease (95% confidence interval 2.4%, 6.9%) in the relative risk of adverse cardiovascular outcomes for men and a 16.3% decrease (95% CI 12.2%, 20.6%) for women. Persistent patients (those remaining on valsartan therapy for 12 months) had final systolic and diastolic BP values 4.1 mmHg and 2.5 mmHg (both p < 0.05) lower than those for non-persistent patients, projecting an 8.4% decrease (95% CI 3.1%, 13.9%) in relative risk of adverse cardiovascular outcomes for men and a 26.6% decrease (95% CI 19.8%, 33.9%) for women. **CONCLUSIONS:** Compliance with and persistence to hypertension therapy predicted substantial decreases in adverse cardiovascular outcomes. These impacts may also lead to improved patient-reported outcomes and decreased costs, and can be used to assess long-term treatment cost-effectiveness.

PCV60

IMPACT OF ADHERENCE TO ANTIHYPERLIPIDEMIC DRUGS ON TOTAL PHARMACY AND MEDICAL COSTS

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OBJECTIVE: To determine the impact of adherence to antihyperlipidemic drug therapy on patients' total pharmacy and medical costs, from the payer's perspective. **METHODS:** Retrospective database analysis of Maryland Medicaid medical and pharmacy claims for the period January 1, 2001–December 31, 2003. Inclusion criteria: Continuously enrolled patients older than 18 years who had at least one prescription claim for any of the statins. Exclusion criteria (to obtain incident cohort): Patients who had at least a claim before July 1st, 2002. Non-adherence was defined as a failure to refill a prescription claim. Generalized linear models with a logarithmic link function were used to determine the impact of adherence to statins on medical costs, after adjusting for age, gender, race and comorbidities by constructing a Charlson Comorbidity Index. **RESULTS:** Total of 2746 patients, 34% male, 44% African-Americans, and 65% older than 63. Patients who adhere to their antihyperlipidemic pharmacotherapy incur 26.08% (p < 0.0001; CI −0.41, −0.19) and 33.25% (p = 0.0002; CI −0.62, −0.19) lower total costs (pharmacy and medical) and medical costs respectively than those who do not. Those between the age of 40 and 63 and those who are African-American incur 19.22% (p < 0.0001; CI −0.31, 0.11) and 14.05% (p = 0.002; CI −0.25, −0.05) lower total costs than those who are older than 63 and those who are Caucasian respectively. A unit increase in the comorbidity index leads to a 10.13% (p < 0.0001; CI 0.07, 0.12) increase in total costs. **CONCLUSIONS:** On average, adherence to antihyperlipidemic pharmacotherapy results in lower total costs. More awareness given to adherence patterns on statins could lower the payers' total medical costs.

PCV61

DETERMINANTS OF ADHERENCE TO STATINS IN A MEDICAID MANAGED CARE POPULATION

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OBJECTIVE: To identify the determinants of drug adherence among statin users in a Medicaid managed care population.

METHODS: Retrospective database analysis of Maryland Medicaid medical and pharmacy claims for the period January 1, 2001–December 31, 2003. Inclusion criteria: Continuously enrolled patients older than 18 years who had at least one prescription claim for any of the statins. Exclusion criteria (to obtain incident cohort): Patients who had at least a claim before July 1st, 2002. Non-adherence was defined as a failure to refill a prescription claim. Logistic regression models were built to determine the association of age, gender, race, and comorbidities (based on Charlson Comorbidity Index) with drug adherence. **RESULTS:** Out of 1997 patients, 61% females, 57% African Americans, and 70% 60 years old or younger. Caucasians were more adherent than African Americans (30% vs. 22%), younger patients less adherent than older patients (24% vs. 26%) and females less adherent than males (22% vs. 28%). In the logistic multivariate model, adjusting for demographics and comorbidities, African Americans (OR 0.68, 95% CI 0.549, 0.841), and males (OR 1.33, 95% CI 1.083, 1.641) were significantly more likely to adhere to statin therapy. **CONCLUSION:** In this Medicaid population, adherence to statin pharmacotherapy is lower among females and African Americans. The effectiveness of adherence programs may be improved if they are earmarked to these specific subpopulations.

PCV62

UNDERSTANDING PATIENT BELIEFS TO DESIGN MEDICATION ADHERENCE MESSAGING

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OBJECTIVE: To identify patient segments based on beliefs about medications, reasons for non-adherence, and demographics to inform actionable adherence improvement messaging. **METHODS:** A total of 5630 patients self-identifying as having high cholesterol responded to the Thomson Medstat PULSE consumer health behavior survey in October–November 2005. These respondents received cholesterol-specific questions about their adherence, beliefs and reasons for non-adherence. Beliefs about the necessity of and concerns about taking cholesterol-lowering medications were assessed via five likert-scale questions, each with summed scores ranging between 5 and 25. A cut-point of 15 was used to identify high versus low necessity or concern creating four patient segments: high necessity/high concern (HNHC), low necessity/high concern (LNHC), low necessity/low concern (LNLC), high necessity/low concern (HNLC). Non-adherence was measured as skipping, taking smaller doses, delaying, and/or stopping medication fills in the past 30 days. Reasons for non-adherence included: cost, forgetting, experience with the medication, self-assessed need, and convenience. **RESULTS:** A total of 4737 respondents reported taking prescription cholesterol-lowering medications with 28.1% reporting non-adherence. Non-adherence rates varied significantly among patient segments: 51.6% of LNHC respondents, 36.1% of HNHC, 29.1% of LNLC and 20.8% of HNLC were non-adherent (chi-square p < 0.0001). Type of and reasons for non-adherence also varied. Patients with high concerns were more likely to report taking smaller doses (33.5% of HNHC and 36.5% of LNHC versus 22.4% of LNLC and 20.6% of HNLC) than those with low concerns and they were more likely to be non-adherent due to experiences with medications (26.6% of HNHC and 30.2% of LNHC versus 12.2% LNLC and 8.7% of HNLC). Patient segments also differed by income (chi-square p < 0.0001), education (chi-square p < 0.0001), and health status (chi-square p < 0.0001). **CONCLUSION:** Creating psychographic patient segments using patient beliefs about medication