OBJECTIVES: The overall purpose of this study was to determine West Virginia (WV) physicians’ attitude toward cost-containment strategies and generic prescribing, and to assess their level of awareness and receptivity towards academic detailing. METHODS: The top 2000 physicians by prescribing volume in the WV state employees health insurance program were surveyed using a self-administered mail questionnaire. Physician attitudes toward popular pharmaceutical cost-control strategies (formulary, prior-authorization, co-pays, generic and therapeutic substitution, and incentives for formulary adherence), generic prescribing, and the potential of academic detailing for appropriate and cost-effective pharmaceutical use was assessed using Likert-type 7-point scales. Generic prescribing frequency and patient acceptance/inquiry for generic drugs and the preferred format of academic detailing visits were also obtained. RESULTS: A total of 455 (23%) usable responses were obtained after 2 mailings. On a scale of 1 to 7 (highly inappropriate to highly appropriate), generic substitution, increased patient co-pays for branded drugs, and therapeutic substitution had the highest mean appropriateness scores of 5.30 (+1.68), 4.49 (+1.71), and 4.36(+2.01), respectively. All other strategies were considered inappropriate with incentives to physicians for prescribing from formularies considered the most inappropriate. Physicians were neutral to mildly positive toward generic drug prescribing, and reported a mean proportion of 46% generic prescriptions written and a 78% patient acceptance of generic prescriptions when written. Physicians were generally aware of academic detailing and mildly positive about it with 69% of surveyed physicians expressing willingness to meet with academic detailers. A once-a-month frequency of visit and up to 20 minutes per visit was favored by almost half of those physicians interested in academic detailing. CONCLUSIONS: Overall, WV physicians are less supportive of cost-control strategies that impose restrictions on their prescribing and more supportive of strategies that do not impose on their prescribing. Study results indicate that WV physicians are receptive to academic detailing.

ARE SICK PEOPLE LESS RESPONSIVE TO PRESCRIPTION BENEFIT CHANGES?
Xiao Q, Marks AS, Patel H
Caremark Inc, Northbrook, IL, USA

OBJECTIVES: To estimate the difference in responsiveness to drug benefit changes between sick and healthy populations under different drug benefit plans. METHODS: Prescription spending in 2001, demographic, co-pays and chronic condition information of 107,710 primary participants between ages 18 to 64 was obtained from Caremark PBM claims system. Existence of chronic conditions identified through pharmacy claims utilization algorithms was used as a proxy for sick people. A 2-part model was used to estimate the prescription spending on copay changes. The first part used a logistic regression to estimate the probability of incurring of any prescription. The second part used an OLS regression on log of total spending for the utilizing participants. RESULTS: Under a 1-Tier copay plan, if the co-pays increase from $5 to $10, the reduction of total spending is 6.4% more for sick people than for healthy people. Under a 2-Tier plan, if the co-pays increase from $5 to $10 for generic and $10 to $15 for brand, the reduction of total spending is 10.2% more for sick people than for healthy people. Under a 3-Tier plan, if the co-pays increase from $5 to $10 for generic, $10 to $15 for brand formulary and $15 to $20 for brand non-formulary, the reduction of total spending is 10.4% more for sick people than for healthy people. CONCLUSIONS: Based on the specific data set, this research shows that sick people are more responsive to drug benefit changes. Since cost-sharing designs are frequently used to contain total drug spending, understanding drug benefit designs for heterogeneous populations is crucial to achieve the optimal balance of sponsor savings and participants’ health.

IMPACT OF PARTICIPANT COST-SHARE ON COMPLIANCE RATES IN PARTICIPANTS WITH DIABETES
Moore JM, Marks AS, Kassulke JP, Patel H
Caremark Inc, Northbrook, IL, USA

OBJECTIVE: To retrospectively assess the impact of participant cost-share levels on medication compliance rates
in participants with diabetes. METHODS: Caremark’s pharmacy claims database was retrospectively analyzed to identify participants filling a prescription for an anti-diabetic drug in plans with average participant cost-sharing of <15% (LOW) or >30% (HIGH) in 2002. Ten age/gender categories were used to match participants in the HIGH and LOW study groups. All 2002 anti-diabetic maintenance drug claims for study participants were analyzed. Compliance rates were calculated for each therapeutic class as the medication possession ratio. Two sample t-Tests compared differences in compliance rates between HIGH and LOW groups. RESULTS: A total of 125,963 individual diabetics were identified (47.7% HIGH; 46% female; 89% >44 yrs). Overall, the mean medication compliance rates were consistently higher for the diabetics with low participant cost-share. The mean medication compliance rate for LOW was 1.00 (95% CI: 1.004, 1.008) and for HIGH was 0.90 (95% CI: 0.903, 0.907; p < .0001). The mean medication compliance rate for females in LOW was 1.00 (95% CI: 0.999, 1.005) and in HIGH was 0.89 (95% CI: 0.890, 0.896); for males in LOW the rate was 1.01 (95% CI: 1.007, 1.012) and in HIGH was 0.91 (95% CI: 0.912, 0.917; p < .0001). Mean compliance rates were lower in the high share group in every age category. The largest difference occurred for participants 19 yrs and younger, where HIGH had a mean compliance rate of 0.98 (95% CI: 0.95, 1.02), and LOW 1.25 (95% CI: 1.21, 1.28; p < .0001). CONCLUSION: This study shows that high participant cost sharing is associated with decreased medication compliance rates for a diabetic population. While the goal of cost-sharing is to decrease total drug spending, the amount saved may not offset the effects of decreased compliance for maintenance medications in a diabetic population. More study is needed to better understand compliance and cost-sharing.

DB2

INCOME DISPARITY IN DIFFUSION OF ORAL DIABETES THERAPY 1999–2001

Snyder SE1, Proveaux WJ2, Mullins CD1

1University of Maryland School of Pharmacy, Baltimore, MD, USA; 2CareFirst BlueCross BlueShield, Baltimore, MD, USA

OBJECTIVES: Until 1995 sulfonylureas were the only oral diabetes medications available in the United States. Currently, there are expanded options in diabetes therapy with five classes of oral medications. Our objective is to test whether the newer therapies diffuse more quickly in higher income areas among an insured population. METHODS: All prescriptions for oral diabetes medication issued to patients in metropolitan Baltimore between 1999 and 2001 were selected from CareFirst Inc’s claims database. Records were aggregated to the patient level with indicators for all classes of drugs used. Patients were divided into those receiving only sulfonylureas and those receiving at least one of the newer medications. Each record was linked to census data for median income by zip code. Linear and logistic regressions were performed on microdata and data aggregated by zip code. Our null hypothesis is that income is not associated with use of newer therapies. We interpret a statistically significant coefficient on income as evidence to reject the null. RESULTS: The mean proportion of the population receiving sulfonylureas only declined from 41% to 28% over the three years. Regression results show a statistically significant negative association between income and monotherapy. Each $10,000 of income is associated with a 1% increase in the share of the population receiving newer medications. Controls for age and gender strengthen this association. Between 1999 and 2001 the coefficient associating income and likelihood of monotherapy increased from .003 to .011 (per $10,000). CONCLUSIONS: Within an insured population, diabetics residing in higher income neighborhoods are more likely to receive one of the new drug therapies. The level of this disparity increased over the course of our study. A subsequent paper will distinguish between co-pay effects and physician practice effects.

DB3

ORAL ANTIHYPERGLYCEMIC MEDICATION NON-ADHERENCE AND SUBSEQUENT HOSPITALIZATION AMONG PERSONS WITH TYPE 2 DIABETES

Lau DT1, Nau DP2

1University of Michigan /Pfizer Inc, Ann Arbor, MI, USA; 2University of Michigan, Ann Arbor, MI, USA

OBJECTIVES: Maintaining glycemic control is one key strategy to prevent diabetes-related complications. It is, however, unclear whether non-adherence to oral antihyperglycemic medications contributes to the risk of complications or other outcomes, such as hospitalization. Our study examines the association between oral medication non-adherence and subsequent hospitalization among persons with Type 2 diabetes. METHODS: Administrative claims data (2000 and 2001) from a managed care organization in the midwestern U.S. were analyzed. The study included 1270 enrollees, aged 18 and over, with diabetes who were taking oral antihyperglycemic agents both years but who did not use insulin. Non-adherence was defined as a medication possession ratio (MPR) below 80%. To account for unobserved factors, conditional multivariate logistic regression analyses were performed where hospitalization in 2001 was regressed on non-adherence in 2000, while controlling for prior hospitalization in 2000, age, gender, and multi-vs.-mono oral therapy. An interaction term of adherence conversions (from adherent to non-adherent, and vice versa) between 2000 and 2001 was also analyzed. RESULTS: Enrollees who were non-adherent to oral antihyperglycemic medications in 2000 had greater odds of being hospitalized in 2001 (OR: 1.80; CI: 1.22–2.67) as compared to those adherent in 2000. Although MPRs within