to prior and following the switch both in the intervention and the control groups.

CONCLUSIONS: The switch to a generic substitute in the case of rosiglitazone led to a reduction in health care costs, without affecting patients’ health.

PDB59
THE COMPLEXITY OF DRUG THERAPY AND SOCIO-ECONOMIC VARIANTS IN PATIENTS WITH DIABETES
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OBJECTIVES: Diabetes accounts for 32% of the Medicare Part D coverage gap on medication behaviors for diabetic patients. Diabetes affects more than 23 million Americans. Despite the importance of drug therapy, little is known about the level of the complexity of drug therapy and its socio-economic variants in patients with diabetes. METHODS: we analyzed 2,189 adult patients with diabetes aged 18-85 using a nationally representative sample in Medical Expenditure Panel Survey (MEPS) in 2007, which was linked with the prescription medication claim files. Generalized linear models (GLMs) were used by the distribution of drug spending to analyze socio-economic and health status factors. RESULTS: The 2,189 adult diabetes patients represented 17.5 million diabetes patients and a total of $79.5 billion spending on prescription drugs by diabetes patients in the US in 2007. On average, a diabetes patient had 46 prescriptions, for a total of $4,235 of total drug spending and $1,323 out-of-pocket spending. The top 5 leading drug classes included antihyperlipidemic (13.4% of total drug spending), anagliesis (4.4%), and proton pump inhibitors (3.8%), ACE-inhibitors (3.7%), and antidepressants (3.2%). On average, a diabetes patient used 3.52 (s.d. 1.76) classes of drugs within the 10 drug classes with the highest spending. In multivariate regression analysis, socio-economic class and diabetes severity explain 5% of the variability in drug spending. CONCLUSIONS: The diabetes patients often used a multiple classes of drugs. Insurance coverage and races affect the drug spending, holding everything else constant. More research are much needed to investigate the consequences of such complexity.

PDB60
EFFECT OF MEDICARE PART D COVERAGE GAP ON MEDICATION CONSUMPTION BEHAVIORS: CASE OF ORAL ANTI-DIABETIC MEDICATIONS
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OBJECTIVES: Few studies have examined the effects of the Medicare Part D coverage gap on medication behaviors for diabetic patients. Diabetes accounts for 32% of the Medicare expenditure and 20% of the Medicare beneficiaries suffer from diabetes. The current study examined how entering the coverage gap in 2007 affected medication adherence rates, medication consumption behavior and resource utilization among Medicare Part D beneficiaries taking oral anti-diabetic medications with different levels of cost-sharing. METHODS: The study used a longitudinal, retrospective pre-post cohort design with a 5% national random sample of Medicare enrollees. Beneficiaries on oral anti-diabetic medications entering the coverage gap were identified using prescription drug records from the Medicare advantage enrollment database and beneficiaries on Medicare Part D prescription drug program, those with no health insurance, with private insurance, and Medicaid spent 73%, 44%, and 16% less in prescription drugs (p<0.001, p=0.001, p=0.03, respectively). Compared to non-Hispanic whites, the blacks spent 15% less on prescription drugs following diagnosis (p<0.001). CONCLUSIONS: The diabetes patients often used a multiple classes of drugs. Insurance coverage and races affect the drug spending, holding everything else constant. More research are much needed to investigate the consequences of such complexity.

PDB61
DECOMPOSING GENDER DIFFERENCES IN ANGIOTENSIN II CONVERTING ENZYME INHIBITORS AND ANGIOTENSIN RECEPTOR BLOCKERS AMONG VETERANS WITH DIABETES
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OBJECTIVES: The objective of the study is to identify and measure the extent to which gender differences in Angiotensin II Converting Enzyme Inhibitors (ACE) and Angiotensin Receptor Blockers (ARB) prescriptions could be explained by demographic, socioeconomic and health status factors. METHODS: Secondary data analyses of merged Veteran Health Administration (VHA) and Medicare claims data for fiscal years 1997 through 2000. Diabetes was identified with International Classification of Diseases, 9th edition (ICD-9-CM) codes from inpatient or outpatient physician visits over the 24 month period. The independent variables were demographics, socioeconomic characteristics, physical health and mental health conditions. Based on the parameter estimates and distribution of individual characteristics, we performed traditional and extended decomposition techniques to analyze the drivers behind the gender differences in lipid control. Population Studied: The final study sample consisted of 263,730 veterans who had an index creatinine value in FY1999, and qualifying creatinine value between 90 and 385 days following the index value. RESULTS: Overall, more men (58.1%) than women (51.3%) were prescribed ACE/ARBs. Even after controlling for many observable characteristics, women were less likely to have ACE/ARB prescriptions. The adjusted odds ratio was 0.82 with 95% CI = 0.77, 0.87. Nearly one third of the 7 percentage point gap in prescription drug use was explained by variables included in the model. The gender gap in ACE/ARBs could be explained by differences in indications for ACE/ARB, diabetes severity, and mental illness (depression, anxiety, and PTSD). CONCLUSIONS: Gender differences in ACE/ARB use persist and only about one-third of vs. 40%, (p<0.001) be explained by differences in patient characteristics. Mental health conditions may be a barrier to lower ACE/ARB rates among women. Our findings highlight the importance of population health approach to medication use in terms of coordinated care for mental illness and physical illnesses.

PDB62
RELATIONSHIP BETWEEN SOCIAL AND ECONOMIC FACTORS AND ANTIDIABETIC MEDICATION PRESCRIBING PATTERNS
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OBJECTIVES: The decision to prescribe medication to newly diagnosed type 2 diabetic patients is influenced by subjective and objective factors including patients’ economic and social status. This study examines the relationship between social and economic indicators and incident antidiabetic medication (ADM) prescribing patterns. METHODS: A retrospective analysis of the Observational Study of Newly diagnosed patients with type 2 diabetes from the 2007-2009 Kentucky Medicaid population. Subjects were included if they had two diabetes-related non-complicated claims with no claims prior to 2007 in the provider-claims file. Patients were stratified into receiving an ADM within or following diagnosis. RESULTS: The ADMs often included a medication within that time frame. We evaluated the effect of social and economic factors on the pattern of prescribing. Mapping techniques were used to illustrate county/regional ecological differences. RESULTS: Patients prescribed an ADM were significantly younger than those not prescribed a medication (43y vs 51y, p<0.001). If patients were given an ADM, they were more likely prescribed metformin in the Appalachian and western rural counties compared with metropolitan counties (39% vs. 32%, P=0.044). Patients in urban counties were more often offered dipeptidyl peptidase IV or two or more antidiabetic medications (46% vs. 29%, p<0.001). However this was not a significant difference. CONCLUSIONS: This study found younger patients being prescribed an ADM within 30 days of incident diagnosis. Older patients were more likely to have no medication after incident diagnosis or waiting for several months before a medication is given. Patients in rural areas are more likely dispensed metformin as the initial ADM. Multiple ADMs and insulin as the initial medication may be a proxy measure for diabetes severity at first presentation.

PDB63
GEORGIC VARIATION IN DRUG SPENDING AND ADHERENCE PATTERNS FOR MEDICARE BENEFICIARIES WITH DIABETES
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OBJECTIVES: Regional variation in healthcare spending is a long standing topic of interest. Little research has shown the opportunity to examine this relationship with respect to drug spending and adherence. Our objective is to determine if beneficiaries residing in regions characterized by high Part D drug spending exhibit higher levels of utilization and adherence to medications recommended in diabetes treatment guidelines. METHODS: We tracked a random 5% sample of Medicare Part D enrollees diagnosed with diabetes in 2006 and 2007 (N = 236,321). Measures included averages for Part D spending, any use, duration of therapy (DOT), and medication possession ratio (MPR) for oral antidiabetic agents, ACE-inhibitors/ARBs, and antihyperlipidemic agents. We aggregated individual values into metropolitan statistical areas (360) and rest-of-state areas (48) and arrayed mean regional measures by deciles. We estimated logistic and OLS regression models controlling for age, sex, comorbidity counts, and region of residence. RESULTS: Part D drug spending varied by a factor of 1.89 between the lowest ($2,613) and highest ($4,952) spending deciles. After regression adjustments, the ratio fell to 1.49. We found little geographic variation in prevalence of use and MPR. However, DOT was roughly one month longer in each drug class in the top compared to the bottom decile (p<.001) in unadjusted comparisons. After adjustment, differences in DOT range from 11-18 days longer for beneficiaries in the top spending decile (p<.001). CONCLUSIONS: We found considerable geographic variation in Part D drug spending. Almost half of the difference between the top and bottom spending deciles could be attributed to differences in beneficiary age, sex, and comorbidities. There were no significant regional differences in user rates or MPR, but DOT for all three drug classes was significantly longer in high spending areas.

PDB64
EVALUATION OF THE BURDEN OF ILLNESS OF TYPE-2 DIABETES MELLITUS IN A MEDICARE POPULATION
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OBJECTIVES: To evaluate the direct healthcare costs of type 2 diabetes (T2DM) among older patients enrolled in Medicare Advantage plus prescription drug plan.
ECONOMIC BURDEN OF CUSHING’S DISEASE: A POPULATION ANALYSIS OF DIRECT MEDICAL COSTS AND UTILIZATION

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OBJECTIVES: Cushing’s disease (CD), a rare pituitary disorder, is associated with significant morbidity and mortality, but the economic impact is unknown. This study assessed the annual healthcare costs and utilization of CD patients.

METHODS: Administrative claims from 2004 to 2008 of a large population with commercial or Medicare-supplemental insurance in the US were analyzed. CD patients were those with medical claims for Cushing’s syndrome (ICD-9-CM: 255.0) and either benign pituitary adenoma (227.3) or hypercortsiromy (07.6). Each CD patient was age- and gender-matched to four patients with non-diabetes patients (controls) by age, gender, ethnicity, geographic region and insurance status.

RESULTS: The identified 877 CD patients (79% female; average age 43 years). Hypertension (43% [CD] vs. 24% [NFPA]) and depression (19% [CD] vs. 12% [NFPA]) were the most common comorbidities in CD patients and more prevalent than in NFPA patients (all p < 0.001). The mean diabetes attributable total healthcare cost for the case cohort was $3,588 vs. $9,270 per patient per year. CONCLUSIONS: All cause healthcare costs were significantly higher for patients with T2DM than for matched controls, highlighting the serious burden of illness in this Medicare Advantage population.

EVALUATING LIFECARES SAVED FROM 2000 TO 2010 IN CHINA DUE TO NOVO NORDISK INSULIN

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OBJECTIVES: Insulin and other diabetes treatments are generally considered cost effective treatment options as they reduce the incidence of complications, increase life expectancy and improve quality of life. This paper quantifies in a new model the life years saved in the Chinese diabetic population between 2000 and 2010 due to sales of Novo Nordisk insulin.

METHODS: The CORE diabetes model was used to generate a huge price pressure for those drugs in Brazil and with this scenario it seems to be difficult to predict the plans to update the drug list to provide more effective treatments for this population.

EXENATIDE (BID) AND LIRAGLUTIDE (QD) TREATMENT PATTERNS AMONG TYPE 2 DIABETES PATIENTS IN THE US

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OBJECTIVES: Exenatide and liraglutide are the two therapeutic options in the GLP-1 anti-diabetic medication class, to improve glycemic control in adults with type 2 diabetes (T2D). This study evaluated patient and prescriber characteristics, treatment patterns, average daily dose (ADD), and glycemic control of patients initiating GLP-1 mediation during 2008 and 2009 in Germany, Belgium and Italy. The Lifecycle EMR database contains records for over 15 million German patients and 3,000 physicians. The cohort included patients who initiated exenatide or liraglutide during the index period (01/01/2009 - 04/30/2010). Patients also had ≥180 days history, pre-index, 90-540 days post-index, ≥1 A1C measurement (C1, C2, C3, ≥0.10-1.16), pre-index and Uni-variates tests were conducted at α = 0.05. RESULTS: The cohort included 692 patients (exenatide 292, liraglutide 400): mean (SD) age 59.0 (±10.9) years, 59% male. Diabetesologists prescribed liraglutide more frequently than exenatide (65% vs. 35%) compared to non-diabetologists (51% vs. 49%). Choice of GLP-1 was not associated with pa-