Rosenstock study and other two RCTs compared Glargine to Determin showed Glargine and Determin has not difference in HbA1c control and hypoglycemia rate for the patient with type 2 diabetes. Based on the Rosenstock study, cost-minimization study was performed. Mean daily deteur dose was higher (0.78 U/kg) than once daily deteur dose (0.52 U/kg). Urt patient required twice daily dosings than glargine (0.44 IU/kg). The direct cost was estimated from the perspective of the health insurance China. The time horizon was one year of treatment. The price was referred to Price in 2008. The currency is Yuan. The cost of insulin medication (glargine or determin) and consumable items (needles, test strips) was collected as the direct costs. The sensitivity analysis on resource use and unit costs around base case parameter values was performed to test the robustness of the base case results. RESULTS: Insulin glargine was associated with 40.77% (8949.05RMB per year) cost saving compared to determin. Diabetic neuropathy and microvascular complications were taken into account. Univariate sensitivity analysis on resource use and price in Determin has been performed and confirmed the robustness of the results in favour of insulin glargine in China. The current study findings are consistent with the direction of magnitude of cost-saving reported in Spain, Hungary, Argentina, Germany and UK. CONCLUSIONS: Insulin glargine was cost saving compared to insulin determin in China. The information is importance for health care providers who are considering the total budget for the type 2 DM patient with basal insulin.

PDB35 COST-EFFECTIVENESS ANALYSIS OF METFORMIN COMBINED WITH SAXAGLIPTIN VS. METFORMIN COMBINED WITH SULFONYLUREAS IN TYPE 2 DIABETES PATIENTS IN ARGENTINA

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OBJECTIVES: To determine the cost-effectiveness ratio of adding saxagliptin to metformin therapy (SAXA+MET) compared to adding sulfonlureas (SULF+MET), in patients with type 2 diabetes mellitus (DM2) who have failed to achieve adequate glycemic control with metformin. METHODS: A discrete event simulation model (Cardiff Long term cost-utility model) based on UKPDS 68 with a fixed time increase was used to simulate disease progression and to obtain an estimate of the treatment’s economic and health consequences in DM2 patients. The clinical efficacy parameters for saxagliptin were obtained from the literature; drug acquisition costs, adverse effects (AEs) and microvascular and macrovascular complications were taken into account. Costs were expressed in United States dollars (2009), with an annual 3.5% discount. The time horizon was 20 years. RESULTS: A lower number of non-fatal events was found for the SAXA-MET-treated group versus the SULF-MET-treated group. Additionally, the model predicted a lower number of fatal events and a lower number of events due to major and microvascular (146 vs. 151) and microvascular (17.7 vs. 17.9) events for the SAXA-MET-treated group vs. the SULF-MET-treated group. The total cost of the SAXA-MET cohort was 14% higher than that of the SULF-MET cohort. Treatment with SAXA+MET resulted in a higher number of QALYs (3.932 vs. 3.972) and LYs (20.898 vs. 20.797) than treatment with SULF+MET; the additional cost per QALY and LY gained was US$6,691 and US$ 14,636 respectively. CONCLUSIONS: Considering the GDP per capita in Argentina, results suggest that the addition of saxagliptin to metformin therapy compared to the addition of sulfonlureas would yield acceptable cost-effectiveness ratios in DM2 patients in Argentina.

PDB36 ASSESSING THE IMPACT OF PAINFUL DIABETIC PERIPHERAL NEUROPATHY (PDPN) OR POST-HERPETIC NEURALGIA (PHN) RELATED HEALTH IMPAIRMENT ON LOSS OF PRODUCTIVE TIME (LOPT)

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OBJECTIVES: To assess the impact of PDPN/PHN-related health impairment on LOPT in patients treated with chronic PDPN/PHN. METHODS: Using data from 777 employed adults with ≥3 months of PDPN/PHN and receiving pain medications, the effect of PDPN/PHN-related impairment on LOPT was estimated by: 1) single equa- tion probit models (SEPM) assuming pain severity was exogenous, adjusting for respondents' demographics, depression, anxiety, pain duration, type of pain, social isolation, and respondents' want to go out and other psychosocial distress (functional difficulties); and 2) seemingly unrelated bivariate probit models (SUBPM), hypothesizing that pain severity was endogenous and considering the same explanatory variables from the SEPM as instrumental variables (IVs). Pain severity was measured using a rating scale ranging from 0 (“no pain”) to 10 (“pain as bad as you can imagine”); Marginal effects were reported in the model coefficients. Results: Thirty percent of respondents reported LOPT. Compared to respondents without LOPT, respondents with LOPT were younger, male, and had more moderate/severe pain (all p < 0.001). Pain severity appears significantly related with social isolation and low productivity impairment. Its relationship with the SEPM appears only significant; the latter variables were neglected in the SEPM or when they were used as IVs in the SUBPM. Marginal effects indicated that, compared to respondents with pain severity ≤ 4, those with pain severity ≥ 8 were 19.3% more likely to incur LOPT when using the SEPM and 14.4% more likely when using the SUBPM. While the specifications tests suggested that pain severity to be truly endogenous and that all IVs jointly had sufficient explanatory power (all p < 0.001). CONCLUSIONS: Pain sever- ity has a significant impact on LOPT. The degree of this impact depends on ones' ideas about how this impact is mediated by respondents' social isolation and psycho- logical distress. Alternative IVs for adjusting endogeneity bias of pain severity are worth exploring.

PDB37 THE IMPACT OF DIABETES ON WORKPLACE ABSENTEEISM AND PRESENTEEISM: A COMPARISON OF CHINA AND JAPAN

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OBJECTIVES: The purpose of this study is to consider the extent to which estimates of the impact of diabetes on employment status, absenteeism and presenteeism varies between China and Japan. METHODS: Data from the 2008 and 2009 National Health and Wellness Surveys undertaken in Japan and urban China were used to estimate a logistic employment status model and ordered probit regression analyses of the determinants of absenteeism and presenteeism for those employed full-time, part-time or self employed. Absenteeism was determined by respondents indicating time off due to ill health in the past seven days; presenteeism was determined by respondents assessing the extent to which workplace productivity was impacted by their health status in the same time period. Apart from diabetic status models included demographic and socio-economic characteristics, the Charlson Comorbidity Index, together with health risk factors and controls for absenteeism experience and diagnosed diabetes. RESULTS: In both China and Japan a diagnosis of diabetes was found to have a significant (1% level) negative impact on employment status (odds ratios 0.340 and 0.796 respectively). The results for absenteeism point once again to the significant (at 1% level) positive impact of diabetes on higher rates of absenteeism with the corresponding odds ratios of 1.037 for China but only 1.140 respectively for Japan. The cost of presenteeism the impact of diabetes is still significant (1% level) in the case of China, but less so for Japan (odds ratios 2.102 and 1.179 respectively). CONCLUSIONS: The presence of diabetes has a significant and negative impact on workforce status as well as on absenteeism in China and Japan. Both countries show similar impacts, although in Japan the impact on presenteeism is less marked.

PDB38 THE IMPACT OF DIABETES ON WORKPLACE PRESENTEEISM: A CROSS-NATIONAL STUDY IN THE EUROPEAN UNION

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OBJECTIVES: The purpose of this study is to consider the extent to which estimates of the impact of diabetes on presenteeism can vary between major industrial countries and to assess the relative contribution of absenteeism, socio-demographic and health risk factors. METHODS: Data from the 2008 National Health and Wellness Survey, a national survey of five EU countries (the UK, France, Spain and Italy) were used to estimate an ordered probit regression analysis of the determinants of presentee- ism for those employed full-time, part-time or self employed. Presenteeism was deter- mined by respondents assessing the extent to which workplace productivity was impacted by their health status on a 10-point scale. The model includes health risk factors (BMI, alcohol use, smoking), the Charlson Comorbidity Index (CCI) along with controls for absenteeism experience and diagnosed diabetes. RESULTS: Absen- teenism, the percentage of time lost in the previous seven days, was the dominant factor impacting presenteeism for all countries (odds ratios 16.17 Germany to 9.23 Italy). With the exception of Spain, obesity and morbid obesity had a positive and significant impact with odds ratios in the range 1.33 – 1.04 and 2.08 – 1.60 respectively. The presence of diabetes was significant for all countries with odds ratios ranging from 1.29 (Italy) to 1.77 (Spain). Replacing diabetes with the CCI resulted in significant odds ratios in the range 1.33 (Germany) to 1.17 (UK). CONCLUSIONS: The presence of diabetes has a significant and negative impact on workplace presenteeism. The impact of diabetes is a similar order of magnitude to the presence of obesity and morbid obesity.

PDB41 BELIEFS AND EXPECTATIONS ABOUT DIABETES AND MEDICATION ADHERENCE IN PERSONS WITH TYPE 2 DIABETES

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OBJECTIVES: Associations between type 2 diabetic patients' beliefs and expectations about their illness and medication adherence were determined. METHODS: A cross- sectional self-administered written survey of type 2 diabetes patients was conducted in an outpatient pharmacy, at a primary care clinic affiliated with a hospital serving a hospital serving an urban population. Study inclusion criteria were being 18 years or older, diagnosed with type 2 diabetes at least 6 months prior to the time of the survey, and taking oral anti-diabetic medication. Exclusion criteria were use of insulin or not being able to read and write in English. The survey included the Brief Illness Perception Question- naire (B-IPQ) to assess individuals’ illness beliefs and the Morisky 8-item Medication Adherence Scale to collect self-reported adherence. Chi-square tests of association and Pearson correlation analysis were used to assess whether illness beliefs were associated with medication adherence. RESULTS: Two hundred and fifty completed surveys were returned by 354 individuals who satisfied inclusion and exclusion criteria, for a response rate of 58%. The sample was 50% Caucasian, 50% African-American, 63% female and 72% had annual household income of less than $25,000. A majority (56%) reported
poor adherence to diabetes medications (Moriyuki adherence score < 6). The proportion of individuals with poor adherence rather than good adherence, was higher among individuals with high B-IPOQ scores for illness consequences (65%, p < 0.006), illness symptoms (67%, p < 0.008), emotional effect of illness (63%, p < 0.012) and amotivation with low B-IPOQ scores for illness understanding (76%, p < 0.000). Illness beliefs regarding how well treatment can control diabetes (0.23, p < 0.007), concerns about diabetes (0.21, p < 0.017) and understanding of the illness (0.20, p < 0.002), had positive correlations with medication adherence. CONCLUSIONS: Illness beliefs were associated with adherence to diabetes medication and may be useful in assessing patients' potential for adherence problems.

**PDB42**

**PATIENT COMPLIANCE TO EXTENDED-RELEASE VERSUS IMMEDIATE-RELEASE GLIPIZE for TYPE 2 DIABETES MELLITUS: A SYSTEMATIC REVIEW**

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**OBJECTIVES:** Compliance with treatment is a key factor for successful treatment of chronic conditions like type 2 diabetes mellitus. Once-daily extended-release glipizide (GXL) has been showing more appealing in patient compliance. However, the data on comparison of GXL with other oral glucose-lowering drugs concerning compliance is limited. We tried to assess the compliance to GXL treatment for type 2 diabetes mellitus when compared with immediate-release glipizide (GIR). METHODS: We searched Medline, EMBASE, Cochrane Library, and the Chinese Biomedical database from their inception to end-Dec, 2009, as well as traced the reference lists. Randomized or non-randomized studies that reported medication compliance/adherence or persistence when using GXL versus GIR for the treatment of type 2 diabetes mellitus were included. Four reviewers judged trial eligibility and extracted data independently. We pooled trial data using the random-effect model and explored heterogeneity by using pre-specified variables. RESULTS: A total of 9 published studies (n = 11,512) were included. GXL resulted in a 7% increase in compliance when compared with GIR (RD = 0.07, 95% CI = 0.06 to 0.08). The subgroup analyses showed that GXL increased patient compliance by 7% when compared with GIR in 4 retrospective database analyses (n = 13,250, RD = 0.07, 95% CI = 0.05 to 0.10) and showed no difference in 5 randomized trials (n = 262, RD = 0.01, 95% CI = 0.03 to 0.05). There was no significant difference in patient compliance between fixed-dose GXL and GIR (RD = 0.05, 95% CI = -0.01 to 0.11); however, the titrated-dose GXL significantly increased patient compliance by 6% (RD = 0.06, 95% CI = 0.01 to 0.10). When compared to GIR, GXL in long-term treatments (equal to or more than 1 year) increased patient compliance by 7% (RD = 0.07, 95% CI = 0.05 to 0.08), while no significant difference in short-term treatments (less than 1 year). CONCLUSIONS: When compared to immediate-release glipizide, extended-release glipizide could increase long-term patient compliance in retrospective database studies, while the increase in the short-term compliance to GXL was not observed.

**PDB43**

**ADHENCE AND PERSISTENCE AMONG TYPE II DIABETIC PATIENTS STARTING MONOTHERAPY ON ORAL HYPOGLYCEMIC AGENTS**

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**OBJECTIVES:** The aim of this study was to measure adherence and persistence of oral hypoglycemic agents among Type II Diabetes patients and to examine differences in adherence and persistence by type of oral hypoglycemic agent (OHA) and demographic characteristics. METHODS: A retrospective analysis was conducted on Mississippi Medicaid claims data for 2002 through 2004. After a 6 month wash-out period, patients beginning OHA monotherapy were classified as taking sulfonylurea, metformin hydrochloride, thiazolidinediones (TZDs) or other. Patients were observed until they had a lapse in Medicaid coverage or discontinued mono therapy on the original OHA. A refill gap ≥ 2 day supply was considered to be discontinuation of therapy. Persistence was measured as percent of patients remaining on therapy at the end of each month. Adherence rates, proportion of days covered (PDC), were computed for each 90 day period that patients remained on therapy after the first fill date. RESULTS: A total of 6,206 diabetic patients > 18 years of age were included with 49% on sulfonylurea, 29% on metformin and 16% on TZDs. After 6 months persist- ence was significantly higher for sulfonylurea and TZD (46% and 45% at 12 months) compared to metformin (42%). Persistence dropped to around 25% by 18 months. Mean adherence rates for Q1 (the 90 day period) were 80% for metformin, 82% for sulfonylurea, and 85% for TZD. Mean adherence rates dropped in Q2 to 68% for metformin, 71% for sulfonylurea, and 72% for TZD and remained relatively stable for patients remaining on therapy for up to 2 years. CONCLUSIONS: The rapid drop in persistence for monotherapy OHAS is not surprising since diabetic regimens are frequently modified. Although average adherence rates for all types of monotherapy OHAS remained relatively steady after Q2, the average rate was below 80%. These results indicate that new OHA patients need extra counseling about the importance of adherence.

**PDB44**

**A SYSTEMATIC REVIEW OF ADHERENCE, QUALITY OF LIFE AND MEDICAL COSTS IN FIXED-DOSE COMBINATION REGIMENS IN DIABETES**

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**OBJECTIVES:** Oral antidiabetics(OAD) have comparable safety and efficacy in fixed-dose combinations(TDC) and loose-pill combination therapies(LPCT) for patients with Diabetes Mellitus Type II(T2DM). To evaluate TDC outcomes besides safety and efficacy a systematic review was conducted. METHODS: Searches of Medline/Embase databases from 1998–2009 used predefined search terms: “fixed-dose combination”, “loose-dose combination” and “diabetes”. Additionally, we reviewed abstracts from ISPOR, EASD and ADA meetings. T2DM studies were included if they reported adherence, patient reported outcomes(PRO), costs, resource use or cost-effectiveness. RESULTS: Seventeen studies met the search criteria. Seven studies reported adherence. Adherence was 10–11% higher for FDCT than LPCT in patients starting combination therapy(two studies). Adherence decreased 1.5% and 10.0% when switching from monotherapy to combination therapy for FDCT and LPCT, respectively(one study, P < 0.001). Three studies report adherence when switching from LPCT to FDCT versus remaining on LPCT. Switching to FDCT increased adherence 3.5%–12.4%, while remaining on LPCT changed adherence −1.5% to 5.0%(P < 0.005). For patients newly initiating OAD medication, one study found no adherence advantage for FDCT, compared with monotherapy or LPCT. Five randomized con- trolled trials(RCTs) reported treatment satisfaction. Four publications found patients preferred FDCT, compared with LPCT. Satisfaction Questionnaire(HADSQ). One publication found improved satisfaction for one TDCS sub-scale only. Five abstracts reported economic outcomes. Two abstracts determined patients on FDCT use fewer health care resources and decreased direct health care costs by $169 and $255 patient per month than LPCT(P < 0.05). Two cost effectiveness models determined clinical benefits into cost savings and increased life expectancy.

**PDB45**

**ASSOCIATION BETWEEN HEALTH INSURANCE PLAN TYPE AND MEDICATION POSSESSION RATIOS IN ADULT WORKING AGE PATIENTS WITH TYPE 2 DIABETES MELLITUS**

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**OBJECTIVES:** The objective of this research project was to evaluate the effect of health insurance plan type on anti-diabetic medication adherence as measured by medication possession ratios (MPR > 0.80: good MPR) for oral medications. METHODS: The data source for this research project was the 2000–2001 MarketScan database, which is comprised of administrative claims data for over 2.5 million privately insured individuals in the United States. MPR was defined as the sum of days supply each anti-diabetic medication divided by the number of days between the first and last prescription fill dates plus the number of days for the last refill. RESULTS: The odds of having a good MPR for oral anti-diabetic medications were evaluated using multiple logistic regression models controlled for insurance plan type plus demographic and clinical characteristics of the target patient population. A propensity score analysis was done using a matching approach to further control for selection bias. The proportion of patients with MPR 80% was 68.2%. CONCLUSIONS: Patients in capped plans were more likely to have good MPR compared to FFS, PPO and POS plan types (odds ratios: 0.75, P < 0.001; 0.81, P < 0.001; 0.81, P < 0.001, respectively). This relationship remained in all quintiles of the propensity score analysis.

**PDB46**

**ADHERENCE TO STATIN THERAPY AMONG THE DIABETES PATIENTS AT A SELF-INSURED MID-WESTERN UNIVERSITY IN THE UNITED STATES**

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**OBJECTIVES:** 1. To determine the pattern of adherence to statins among the diabetes patients at a self-insured university. 2. To determine the effect of independent variables [age, gender, co-payment, and campus location (main campus, local community campus) on adherence to statins. METHODS: Pharmacy claims data was used to identify patients using both diabetes and statin drugs during the study period between January 1, 2006 and June 2, 2008. Adherence to statins was calculated at regular observation periods using Medication possession ratio (MPR). Patients with MPR ≥ 80% were considered adherent. Patients with MPR < 80% were considered non-adherent. Logistic regression was used to study the effect of independent variables on adherence to statins. RESULTS: Two hundred and ninety-five patients were included in the study. The mean age of the patients was 55.09 ± 9.30 years. The mean MPR of statins was 0.76, 0.70, and 0.68 in the 6, 12, and 24 months observation periods respectively. During the first six months, about 58% of patients were adherent to statins with MPR > 0.80. About 51% and 48% of patients were adherent to statins during the 12 and 24 months observation periods. Age was significantly positively associated with adherence to statins (Odds ratios, 1.04, 95% CI, 1.01–1.07). Males were 48.3% more likely