clinics of a regional hospital in southern Taiwan. Outpatients with type 2 diabetes were invited to participate the interviews for measuring Qol. After finishing the TTO exercise for measuring Qol, a semi-structured interview was followed to explore participant’s view on the methods and specific attributes for trading off. TTO results were transformed to utility value, and interviews were recorded, transcribed verbatim and analyzed by constant comparison approach to saturation.

RESULTS: Of all, 96 of the 100 participants completed the TTO (mean age: 55.8 ± 11.0 years, 54.2% male) the average utility is 0.692 ± 0.217, yet most participants (n = 68, 70.8%) rated health status and income, age, and life expectancy and were willing to give up any life years to exchange a full health. At interviews, participants revealed their worries, anxiety, discomfort and disturbances of daily life related to diabetes, but those factors were not considered when trading life year and health status during TTO exercise; instead, satisfaction of life expectancy, child-care and self-identification on values were considered. Information provided by healthcare providers, peer supports and religious were found to help patients cope with the disease and improve health-related Qol.

CONCLUSIONS: For patients with chronic, stable diabetes, an adaptation process may have diluted the impacts of patients’ concerns on health-related Qol, and hence trading on life years and health status is inappropriate to measure Qol utility. Further study is to explore feasibility of TTO at different stages of diabetic complications, and cross-validate between TTO and other utility measures.

PDB49

HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH TYPE-2 DIABETES: KOREAN AUDIT OF DIABETES-DEPENDENT QUALITY-OF-LIFE
Kim DM1, Kim SG1, Cho DH2, Kim CH3, Lee WY4, Won GJ5, Ko SK6, Park HJ1
1Hallym University Medical Center, Kangdong Sacred Heart Hospital, Seoul, South Korea, 2Korea University, Seoul, South Korea, 3Sungkyunkwan University, Chungang, South Korea, 4Sejong General Hospital, Gyeonggi-do, South Korea, 5Hallym University Sacred Heart Hospital, Gyeonggi-do, South Korea, 6Kangbuk Samsung Hospital, Seoul, South Korea

OBJECTIVES: Quality-of-life (Qol) is increasingly recognized as an important outcome measure that provides information on the burden of diabetes on the physical, mental, and social aspects of patients’ health. To pick up disease-related changes in Qol of diabetes patients in Korea, we administered Korean Audit of Diabetes-Dependent Quality-of-Life (K-ADDQol) instrument.

METHODS: A prospective observational study was carried out on type 2 diabetic patients from the diabetic clinics of 24 medical centers throughout Korea. A total of 413 diabetic patients aged 40 years and over were assessed. Health-Related Qol (HRQol). HRQol was assessed with K-ADDQol instrument:

RESULTS: Patients with diabetes were 58 - 97 years old (47.2% female), had diabetes for 7.0 - 6.2 years. The mean present Qol was 0.4 ± 0.97 (range: 1 - 3) male (58%); and diabetes-dependent Qol was −1.5 ± 0.98 (range: 1 - 3) [very much better] to 1 [worser]. Patients with diabetes and those with hypertension reported lower present Qol, compared with diabetes only (0.3 ± 1.01, 0.6 ± 0.85; p = 0.016). The mean KR-ADDQol average weighted impact (AWI) score was −2.4 ± 1.8. Patients with 15-20 years of diabetes reported significantly worse AWI scores (−3.7 ± 1.6) compared with those with 10-15 years (−1.9 ± 1.5). A negative impact of diabetes was seen in all the dimensions of KR-ADDQol. Freedom to eat and people’s reaction remained as the most (mean AWI scores: −4.3 ± 2.8) and least (−1.3 ± 2.1) affected Qol domains, respectively, when weighting was considered.

CONCLUSIONS: Type 2 diabetes has a negative impact in HRQol, the most important being freedom to eat and people’s reaction. These findings highlighted the impact of diabetes on Qol with particular reference to the effects on freedom to eat, and freedom to drink. Our study contributed to the knowledge of Qol in Korean patients with type 2 diabetes by using a diabetes-specific Qol instrument. These findings suggest that the impact of diabetes on Qol in Asian is similar [ADDQol AWI score in Singaporeans: −2.6 ± 1.9].

PDB50

MEDICATION BELIEFS AMONG LOW-INCOME AFRICAN AMERICANS AND CAUCASIANS WITH DIABETES
Iyer N, Thomas J
Pardee University, West Lafayette, IN, USA

OBJECTIVES: We assessed medication beliefs and evaluated association between race and medication beliefs among low-income African Americans and Caucasians with diabetes. METHODS: A cross-sectional self-administered written survey of Type 2 diabetes patients was conducted at a primary-care clinic affiliated with a hospital serving an urban population. 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 inability to read and write in English. The survey included the Beliefs about Medications Questionnaire to assess individuals’ medication beliefs. Analysis of variance was used to compare differences in medication beliefs across race.

RESULTS: A total of 387 low-income African Americans and Caucasians were obtained from 387 independently identified and Caucasian medication beliefs were compared using an independent t-test and multiple comparisons for differences in mean medication beliefs. Mean scores for perceived harm from medications were higher for African Americans (2.55) than Caucasians (2.29) (p = 0.0162). Mean scores for perceived overuse of medications by prescribers were higher for African Americans (3.32) as compared to Caucasians (3.04) (p = 0.0497). CONCLUSIONS: Small differences in medication beliefs between African Americans and Caucasians were observed after adjusting for other covariates. Exploration of the role of medication beliefs in racial disparities may be informative.

PDB51

IMPROVING HEALTH INSURANCE AND PREVENTIVE EFFORT AMONG DIABETIC PATIENTS: THE CAMEROonian EXPERIENCE
Trajillo A1, Vecono-Dorta A2, Razz Gomez F3, Steinhardt Lc
1John Hopkins School of Public Health, Boston, MA, USA, 2Institute for Health Metrics and Evaluation; University of Washington, Seattle, WA, USA, 3Universidad Javeriana, Bogota, DC, Colombia

OBJECTIVES: Individuals with type 2 diabetes usually show low compliance with secondary prevention measures. Economic theory states that, from the demand side, insurance reduces the incentives for individuals to claim self-protection and hence, increases the ex-ante moral hazard while in the other hand, it selects individuals with lower risk preferences. This analysis aims to determine the net effect of contributory and subsidized insurance on preventive effort in individuals undergoing diabetes in Colombia.

METHODS: Using data from the National Health Survey-2007, we selected individuals aged between 18-69 and previously diagnosed with diabetes (n = 1446). We performed an instrumental variables model by treating the choice of insurance as endogenous and using self-employment and the proportion of individuals insured under either contributory and subsidized regimes in the municipality as instruments. In this analysis we present marginal effects.

RESULTS: We found evidence that, controlling for covariates, health insurance reduces disease prevalence in individuals under contributory and subsidized regimes (0.259; SE 0.126) in comparison to uninsured individuals; however, for those enrolled in the Subsidized regime the results were not significantly different when comparing to uninsured individuals (0.047; SE 0.113).

CONCLUSIONS: The internalization of costs by health insurers throughout the life of individuals suffering from diabetes is essential to improve secondary prevention in diabetes in the country. In this case, we found that, unlike the Subsidized Regimen, the more comprehensive benefits plan in the Contributory scheme is likely to increase the cost faced by the insurer, encouraging it to promote preventive activities among individuals with diabetes. This finding has important policy implications given the rapid growth in health care costs to treat diabetes in Colombia. These results are easily inferred for other preventable chronic conditions such as chronic obstructive pulmonary disease, heart disease and hypertension.

PDB52

A LITERATURE REVIEW OF DIABETES RISK ASSESSMENT TOOLS
Thoputtra T, L S, Newby D, Schneider J
University of Newcastle, Callaghan, NSW, Australia

OBJECTIVES: To review the variety of diabetes risk assessment tools and their validity. METHODS: An electronic literature search of the EMBASE, MEDLINE, Cochrane library was undertaken using key words ‘diabetes risk’ and screening or assessment or score or questionnaire, ‘diabetes prediction’, ‘medical screening’, and ‘health risk assessment’ from 1995-2010. References of identified articles were manually searched. RESULTS: The electronic search retrieved a total of 2168 articles reporting diabetes risk questionnaires. Deletion of duplicates by Endnote and manual culling produced a list of 41 questionnaires developed in 22 countries, with the majority (n = 26) developed in North America and Europe; the remaining came from Asia (n = 6), Middle East (n = 3), Africa (n = 1) and Australia (n = 1). Of the 41 questionnaires, 17 were developed for screening of undiagnosed diabetes and 24 for predicting the risk of developing diabetes in the next 2-20 years. All identified tools are short questionnaires of 2-16 questions with common variables of diabetes risk factor such as age, gender, waist circumference, BMI, family history of diabetes, history of hypertension or antihypertensive medications being used for risk assessment. While scoring format and cutoff points are diverse across the questionnaires, the overall sensitivity, specificity, area under receiver operating characteristic curve (ROC) ranged from 40-97% and 24-86% and 62-87% respectively. Comparatively speaking, there were more tools developed for predicting the risk of developing disease in recent years. CONCLUSIONS: There is a trend of increasing availability of diabetes prediction tools with the existing diabetes risk assessment tools being generally short questionnaire aiming for ease of use in clinical practice. The overall prevalence of existing tools showed moderate to high accuracy in their predictive performance. However, there are not enough reports about their application in real-life clinical settings to allow an assessment of their effectiveness in routine practice.

PDB53

PRESCRIBING PATTERN OF ANTIDIABETIC DRUGS IN T2DM PATIENTS ATTENDING TERTIARY CARE HOSPITAL IN INDIA
Raval AD1, Dhanaraj E2, Bhansali A3
1Institute of Pharmaceutical Education and Research, Pune, India, 2Post Graduate Institute of Medical Education and Research, Chandigarh, India

OBJECTIVES: To identify patterns of antidiabetic drug prescribing in established type 2 diabetes mellitus, to assess compliance of prescribing patterns with current recommended guidelines for the treatment of the antidiabetic drugs.

METHODS: Patients with established T2DM who attended the endocrinology Out-patient Clinic in Postgraduate Institute of Medical Education and Research, Chandigarh, India were evaluated in a retrospective observational manner. Patients were examined for social, demographic and clinical variables and medications.
RESULTS: A total of 1185 established T2DM patients were assessed. The mean (SD) age was 55 (10) years and mean duration of diabetes (SD) of 10 (7) years. Metformin was the most commonly prescribed drug [27% (70%)], in general followed by insulin [62% (53%)], sulfonylureas [52% (44%)], and pioglitazone [32% (28%)]. A total of 348 (29%) patients received insulin and metformin combination therapy. The most frequently prescribed monotherapy was insulin [214 (62%)], followed by metformin in 81 (23%), sulfonylureas in 49 (14%) and pioglitazone in 4 (1%) patients. Family history (OR 1.76, 95% CI 1.18, 2.64), diabetes duration (OR 2.62, 95% CI 2.05, 3.36), HbA1c (OR 1.25, 95% CI 1.01, 1.50), neuropathy (OR 1.57, 95% CI 1.14, 2.3), nephropathy (OR 1.77, 95% CI 1.40, 2.24), retinopathy (OR 1.97, 95% CI 1.63, 2.40), Coronary Artery Disease (CAD) (OR 1.57, 95% CI 1.1, 1.4, 2.2) and diabetic foot (OR 1.62, 95% CI 1.12, 2.40) were all significantly associated with the insulin therapy. Obese and overweight patients were prescribed oral antidiabetic drugs. [metformin (OR 1.25, 95% CI 1.15, 1.35), sulfonylurea (OR 1.28, 95% CI 1.01, 1.6), and pioglitazone]. CONCLUSION: This study finding indicates that medication use was consistent with evidence based practice guidelines in T2DM. There was, however, scope for improvement in prescribing, especially in the T2DM patients with complications.

PDB54 USE OF ELECTRONIC MEDICAL RECORDS FOR CLINICAL RESEARCH IN THE MANAGEMENT OF TYPE-2 DIABETES
Kamal KM1, Civitarese L2
1Duquesne University, Pittsburgh, PA, USA, 2Preferred Primary Care Physicians, Carnegie, PA, USA
OBJECTIVES: There is a growing interest in the use of electronic medical records (EMRs) for clinical research. The study describes a collaborative research project that uses an EMR database to explore the level of diabetic care in patients with type 2 diabetes in a primary care setting. METHODS: A retrospective study was conducted using electronic medical records (EMR) of 4,598 patients enrolled in the Preferred Primary Care Physicians group. Patients with type 2 diabetes were identified using ICD-9 codes of 250.xx (January 1, 2004 to March 31, 2009). Patients > 18 years of age, with or without the visits with their respective physicians, and having an active status in the database were selected. Demographic characteristics, clinical parameters, (HbA1c, LDL, HDL) medication use, and number of office visits were identified. Data was extracted using Microsoft SQL and descriptive statistical analyses were conducted using SPSS version 18.0. RESULTS: The study identified 4,598 patients (mean age 67 ± 12 years and males [51.8%] with type 2 diabetes. A total of 54,590 office visits were recorded with a mean of 14.1 visits and 127 visits between days. 3,100 (61.3%) patients had HbA1c levels < 7, 1,473 (29.1%) patients had levels between 7-9, and 484 (9.6%) patients had levels > 9. 970 (59.2%) patients had LDL below 100 mg/dl, and 2,737 (40.8%) had LDL greater than 100 mg/dl. Mean number of active medications were 2.34 and diabetes medications were 1.94. Combination drugs were used the most compared with amino acid derivatives and amylin analogs. CONCLUSIONS: The collaborative research project has been established between clinicians and researchers, a baseline data extraction has been developed and new further study will be necessary to prove that specific interventions in high risk patients, i.e. HbA1c > 9, can ultimately improve care.

PDB55 CLINICAL AND ECONOMIC EVALUATION OF A DIABETES MEDICATION MANAGEMENT PROGRAM: 2 YEAR PROGRAM UPDATE
Gorzella B1, Kim Y1, Prasla K1, Tabor T1, Chaddick J1, Godley PJ1
1University of Houston, Houston, TX, USA, 2Texas Pharmacy Association, Austin, TX, USA
OBJECTIVES: To assess the clinical and economic impact of pharmacist education, monitoring, and management of patients with diabetes mellitus (DM) enrolled in a free clinic that serves a rural’s low-income population. METHODS: Data from 77 patients continuously enrolled in a newly established pharmacist service were analyzed. Patients were enrolled for free care and/or insurance status, and had a diagnosis of DM upon entry. Under a collaborative agreement, pharmacists educated patients on DM, counseled patients on lifestyle modifications, assessed appropriateness of drug therapy, and managed drug therapy and associated comorbid conditions. Clinical impact was measured by changes from baseline in hemoglobin A1c (A1c) levels, blood pressure, and lipid levels over a one month period. RESULTS: Pharmacists provided diabetes management including medication, education and diet counseling to 100% (n=77) of diabetic patients. Medication Possession Ratio (MPR) was significantly greater in the intervention group compared to controls (0.89 versus 0.78, respectively). A significant change in the intervention group was observed in the mean change of A1c levels, blood pressure (BP), and lipid levels. Blood pressure levels decreased by 0.1 mmHg for both systolic and diastolic BP in the intervention group. The number of office visits decreased by 0.8 in controls and 1.5 in MMP patients; the difference between groups was significant (P<0.05). After two years, the average per member per month (PMPM) costs increased by 16% and 36% in MMP and control groups, respectively. The increase was mainly attributable to growth in diabetes-related drug and hospitalization costs.漢When compared to matched CONCLUSIONS: Pharmacists education, monitoring, and management of patients with DM has the potential to significantly impact clinical outcomes and improve costs of care for patients in underserved rural areas.

PDB57 IMPACT OF A PHARMACIST-BASED DIABETES MANAGEMENT PROGRAM ON ADHERENCE TO MEDICATION FOR DIABETIC PATIENTS
Agrawal H1, Sarogy S2, Pande R1, Triki N1, Greenberg D1, Mossinson D2, Shani S1
1Preferred Primary Care Physicians, Carnegie, PA, USA, 2Preferred Primary Care Physicians, Hanover, NJ, USA
OBJECTIVES: To assess the clinical and economic impact of pharmacist education, monitoring, and management of patients with diabetes mellitus (DM) enrolled in a free clinic that serves a rural’s low-income population. METHODS: Data from 77 patients continuously enrolled in a newly established pharmacist service were analyzed. Patients were enrolled for free care and/or insurance status, and had a diagnosis of DM upon entry. Under a collaborative agreement, pharmacists educated patients on DM, counseled patients on lifestyle modifications, assessed appropriateness of drug therapy, and managed drug therapy and associated comorbid conditions. Clinical impact was measured by changes from baseline in hemoglobin A1c (A1c) levels, blood pressure, and lipid levels over a one month period. RESULTS: Pharmacists provided diabetes management including medication, education and diet counseling to 100% (n=77) of diabetic patients. Medication Possession Ratio (MPR) was significantly greater in the intervention group compared to controls (0.89 versus 0.78, respectively). A significant change in the intervention group was observed in the mean change of A1c levels, blood pressure (BP), and lipid levels. Blood pressure levels decreased by 0.1 mmHg for both systolic and diastolic BP in the intervention group. The number of office visits decreased by 0.8 in controls and 1.5 in MMP patients; the difference between groups was significant (P<0.05). After two years, the average per member per month (PMPM) costs increased by 16% and 36% in MMP and control groups, respectively. The increase was mainly attributable to growth in diabetes-related drug and hospitalization costs.漢When compared to matched CONCLUSIONS: Pharmacists education, monitoring, and management of patients with DM has the potential to significantly impact clinical outcomes and improve costs of care for patients in underserved rural areas.

PDB58 WHAT IS THE IMPACT OF GENERIC SUBSTITUTION OF ROSIGLITAZONE ON PATIENT OUTCOMES AND TREATMENT COSTS? AN HMO EXPERIENCE
Trilk J1, Groenberg D1, Mossinson D2, Shani S1
1Ben-Gurion University of the Negev, Beer Sheva, Israel, 2Maccabi Healthcare Services, Tel Aviv, Israel
OBJECTIVES: We assessed the impact of the use of a generic substitute of rosiglitazone (an anti-diabetic drug) on patient outcomes and treatment costs. METHODS: From the Maccabi Healthcare Services computerized databases we identified three groups of diabetic patients: 1. Patients who purchased the branded medication Avandia® and switched entirely to its generic substitute Rosini® (the intervention group; same number of packages and dosage; the intervention group; N=1,632). 2. Patients who switched to Rosini® partially (different number of packages and/or different dosage; the control group; N=440). AND 3. Patients who did not switch to Rosini® at all (N=897). For each patient we retrospectively obtained and compared the following parameters: blood pressure (BP), total cholesterol (TC), low-density lipoprotein cholesterol (LDL), high-density lipoprotein cholesterol (HDL), body mass index (BMI), and the number of office visits.漢When compared to matched CONCLUSIONS: Adherence to medication in diabetic patients improved throughout the pharmacist-based diabetes management program. Further, longitudinal data may be needed to conclusively indicate the impact of pharmacists based intervention.