PDB75
TRENDS IN ANTIDIABETIC MEDICATION USE IN PATIENTS WITH TYPE 2 DIABETES MELLITUS AND CHRONIC KIDNEY DISEASE
Gor D, Touchette D
University of Illinois at Chicago, Chicago, IL, USA
OBJECTIVES: The National Kidney Foundation Kidney Disease Outcomes Quality Initiative (NKF- KDOQI) published guidelines on antidiabetic medication selection and dose adjustments in patients with chronic kidney disease (CKD) which includes avoiding glyburide in moderate to severe CKD and metformin in severe CKD. Analyzing trends in these medication usages can be helpful for determining the need for intervention to address prescribing practices. The objective of this study was to assess antidiabetic medication use in patients with type 2 Diabetes Mellitus (T2DM) and CKD across years and according to CKD stages. **METHODS:** We analyzed cross-sectional data from National Health and Nutrition Examination Survey (NHANES) from the years 2005-2012. T2DM was defined by these criteria: self-reported non-gestational diabetes, age over 30 years at time of diagnosis, and lack of insulin use within one year of diagnosis. NKF- KDOQI guidelines were used to define CKD stages. Weighted proportions of patients with different classes of antidiabetic medication use were compared across the years and CKD stages using PROC SURVEY procedures in SAS 9.4. **RESULTS:** There were total 2046 respondents (2005-06: 366, 2007-08: 548, 2009-10: 586, 2011-12: 546) with T2DM and 37.5% of them had CKD. Overall sulfonylurea and glyburide use in CKD was 43.8% and 16.4% respectively and it did not change substantially over the years. The use of insulin (11.7%-34.4%) and DPP-4 inhibitors (0.0%-11.0%) increased from 2005 to 2012; whereas, thiazolidinedione use decreased (21.1%-7.5%). Metformin use decreased from stage 1(57.9%) to stage 5 (0.0%) of CKD; whereas insulin use increased (13.8% to 63.4%). **CONCLUSIONS:** A substantial number of patients were receiving glyburide which is not recommended in this population. This warrants a need to implement programs designed to reduce inappropriate sulfonylurea use in patients with CKD, where use of these medications can increase risk of hypoglycemia and related complications.

PDB76
QUALITY OF CARE AND HEALTH-RELATED QUALITY OF LIFE MEASURES IN DIABETIC PATIENTS WITH COMORBIDITIES
Le Q, An J
Western University of Health Sciences, Pomona, CA, USA
OBJECTIVES: To examine the impact of concordant comorbidity (CC) or discordant comorbidity (DC) in patients with diabetes (DM) on the process of care and health-related quality of life (HRQOL) measures. **METHODS:** Using the 2011-2013 Medical Expenditure Panel Survey data, adult diabetic patients were identified. Twenty different chronic conditions were captured and categorized into three mutually exclusive groups: (1) DM only, (2) DM plus CC only, and (3) DM plus DC. Binary indicators reporting receipt of (1) one dilated eye examination, (2) two or more HbA1C tests, (3) one foot examination, (4) one cholesterol test, and (5) flu vaccination in the past year were used to assess quality of diabetes care. HRQOL measures included the preference-based SF-6D, SF-12 physical component summary (PCS) and mental component summary (MCS) scores. Multivariate models were used to examine the comorbidity conditions for quality of diabetes care and HRQOL measures. **RESULTS:** A sample of 8,604 adult diabetic patients was identified of which 11.4% had DM only, 40.5% had DM plus CC only, and 48.1% had DM plus DC. Diabetic patients with CC condition and those with DC condition were likely than patients without comorbidities to receive better care for cholesterol test [OR (95% CI) =2.50 (1.85-3.38) and 2.33 (1.64-3.32), respectively], HbA1C test [OR=1.59 (1.16-2.17), and 1.48 (1.10-2.00), respectively], and flu vaccination [OR=1.40 (1.08-1.83), and 1.64 (1.25-2.16), respectively]. Additionally, patients with DC condition were also more likely to receive eye examination [OR=1.33 (1.05-1.69)] and overall quality of care (receipt of all 5 tests, examinations, and flu-vaccination) [OR=1.37 (1.01-1.87)] than those without comorbidities. Compared to diabetic patients without comorbidities, those with DC condition had significantly lower SF-6D, SF-12 PCS, and SF-12 MCS scores (all P's < 0.001). **CONCLUSIONS:** Diabetic patients with DC condition were associated with better quality of diabetes care but worse health-related quality of life than those patients without comorbidities.

PDB77
ASSESSING THE EFFECT OF FORMULARY RESTRICTIONS ON ANTIHYPERGLYCEMIC DRUGS
Slejko JF[1], Rueda J[1], Cooke CE[1], Shen X[1], Ciarametaro M[2], Dubois RW[2], Stuart B[1]
[1]*University of Maryland School of Pharmacy, Baltimore, MD, USA,* [2]*National Pharmaceutical Council, Washington, DC, USA*
OBJECTIVES: The study objective was to examine the effect of formulary restrictions on the use of non-insulin antihyperglycemic drugs. **METHODS:** This retrospective cohort study used the Chronic Condition Data Warehouse (CCW) 5% File to identify low income subsidy (LIS) Medicare beneficiaries with a prior type 2 diabetes mellitus (T2DM) diagnosis who were randomly assigned to one of 17 benchmark formularies and were using metformin alone or in combination with one other antihyperglycemic drug. Using Part D prescription claims, the study cohort was categorized into four groups according to their drug exposure during 2012: metformin alone, metformin plus DPP4 (MET+DPP4) metformin plus sulfonylurea (MET+SULF) or metformin plus another non-insulin antihyperglycemic drug. For each drug we identified three possible formulary restrictions: prior authorization, step therapy or formulary exclusion. For each formulary, we calculated the distribution of beneficiaries across the four drug categories and examined the associated formulary restrictiveness. **RESULTS:** 20,542 LIS beneficiaries met our eligibility requirements. In the least restrictive formulary where no DPP4 drugs were excluded, 51% of plan beneficiaries used metformin alone, 12% used MET+DPP4, 31% used MET+SULF and 7% used metformin plus another antihyperglycemic drug. As restrictions varied across plans, utilization patterns changed. In a plan that excluded five DPP4 drugs, 53% used metformin alone, 8% used MET+DPP4 and 31% used MET+SULF. In a plan that excluded three DPP4 drugs and required step therapy for five, 56% used metformin alone, 7% used MET+DPP4 and 32% took MET+SULF. In a plan that excluded two DPP4 drugs and required step therapy for six, 49% used metformin alone, 11% used MET+DPP4 and 33% used MET+SULF. **CONCLUSIONS:** For LIS beneficiaries with T2DM who face nominal co-payments for prescription drugs, it appears that restrictions placed on antihyperglycemic drug commonly used in combination with metformin, particularly DPP4s, are associated with a shift to metformin monotherapy or MET+SULF.

PDB78
RISK FACTORS OF READMISSIONS AMONG MULTI-ETHNIC ASIANS WITH DIABETES IN A TERTIARY CARE HOSPITAL
Png ME[1], Yoong JS[1], Chen C[1], Tan CS[1], Tai ES[2], Khoo E[2], Chong KJ[2], Wee HL[1]
[1]*National University of Singapore, Singapore, Singapore,* [2]*National University Hospital, Singapore, Singapore*
OBJECTIVES: This study examines the risk factors and cost associated with early (≤30 days) and long-term (≤180 days) readmissions among multi-ethnic Asians with type 2 diabetes in Singapore. **METHODS:** Potential risk factors associated with early and long-term readmission rates among type 2 diabetes patients were investigated from electronic medical records available at a local tertiary acute hospital from 2010-2011. These risk factors included gender; age; ethnicity (Chinese, Malay, Indian or others); length of index stay; proportion of out-of-pocket expenditure vs. total health expenditure; whether primary reason for index admission was related to any of the type 2 diabetes-related ambulatory care sensitive conditions; severity of diabetes complications; burden of comorbidities; intensification of diabetes regimen; diabetes medication adherence; as well as whether glycated hemoglobin (HbA1c) was abnormal based on last result nearest to index discharge date. Logistic regression was used to identify patient and hospitalization characteristics associated with both readmissions. Scenario analysis was used to test the robustness of the estimates. **RESULTS:** Early and long-term readmissions among type 2 diabetes patients were common among all genders and ethnicity groups, incurring significant resultant costs. Factors affecting early and long-term readmissions were similar; both burden of comorbidities and severity of diabetes complications measures captured in electronic medical records were strongly associated both types of readmission. **CONCLUSIONS:** Existing routinely-captured clinical data can be used to generate simple decision support tools that identify patients at risk of readmission before discharge, potentially helping to reduce preventable hospitalizations and reducing costs. Further studies are needed to study the root causes of other disparities.

PDB79
PREDICTING NON-INSULIN ANTIDIABETIC DRUG ADHERENCE USING A THEORETICAL FRAMEWORK BASED ON THE THEORY OF PLANNED BEHAVIOR IN ADULTS WITH TYPE 2 DIABETES: A PROSPECTIVE STUDY
Zomahoun HT, Moisan J, Lauzier S, Guillaumie L, Grégoire J, Guénette L
Laval University, Quebec, QC, Canada
OBJECTIVES: Understanding the process behind non-insulin antidiabetic drug (NIAD) non-adherence is necessary for designing effective interventions to resolve this problem. This study aimed to explore the ability of Theory of planned behaviour (TPB), known as a good predictor of behaviours, to predict future NIAD adherence in adults with type 2 diabetes. **METHODS:** We conducted a prospective study of adults with type 2 diabetes. They completed a questionnaire on TPB variables (the attitude towards the behaviour, the subjective norms, the perceived behavioural control, and the intention to adhere to the NIAD) and external variables. Linear regression was used to explore the TPB's ability to predict the future NIAD adherence, which was prospectively measured as the proportion of days covered by at least one NIAD. The interaction between past NIAD adherence and intention was tested. **RESULTS:** The sample included 340 people. There was an interaction between past NIAD adherence and intention to adhere to the NIAD (p-value= 0.0324). Intention did not predict future NIAD adherence in the past adherers and non-adherers groups, but its association measure was high among past non-adherers [β= 5.686; 95%CI= (-10.174, 21.546)]. In contrast, intention was mainly predicted by perceived behavioural control both in the past adherers [β= 0.90, 95%CI= (0.796, 1.004)] and non-adherers groups [β= 0.76, 95%CI= (0.555, 0.966)]. **CONCLUSIONS:** There was a gap between intention to adhere and actual NIAD adherence, which is partly explained by the past adherence level in adults with type 2 diabetes. However, we have not had quite statistical power to show a statistically significant effect of intention on NIAD adherence among past non-adherers.

PDB80
ARE FINANCIAL INCENTIVES IN PAY-FOR-PERFORMANCE PROGRAMS SUFFICIENT? A CASE STUDY OF DIABETES CARE IN MEDICARE ADVANTAGE PLANS
Bognar K[1], Shafrin J[1], Sheehan J[2], Scanlon D[3]
[1]*Precision Health Economics, Los Angeles, CA, USA,* [2]*AstraZeneca, Fort Washington, PA, USA,* [3]*The Pennsylvania State University, University Park, PA, USA*
OBJECTIVES: By 2018, the Centers for Medicare and Medicaid Services aim to link 90% of Medicare reimbursement to quality measures. An important, but unanswered question is whether programs linking quality and payment sufficiently incentivize providers and plans to improve patient outcomes through better care management and pharmacy selection. We examined how intensification of treatment for patients with type 2 diabetes (T2D) not at glycated hemoglobin (A1C) goal would affect Medicare Advantage (MA) plans' quality stars and reimbursement. **METHODS:** We used 2007-2012 National Health and Nutrition Examination Survey data to estimate current A1C levels and medication use among individuals aged ≥65 years with T2D. Using treatment effects measured from clinical trials, we simulated the change in A1C levels if treatment was intensified with an additional drug class for patients with A1C>7.5%. Then, we calculated the impact on MA plan quality performance and reimbursement using 2015 Medicare Star Ratings data. **RESULTS:** Among elderly patients with T2D, 8.6% had an A1C>9.0%. Treatment intensification would reduce

the share of patients with poor control to 5.8% (a 32.6% relative reduction), resulting in an 8.9 percentile improvement in the average plans' diabetes quality ranking. Moreover, 17.8% of plans would reach the next star quality threshold for A1C control. However, only 1.1% of plans would improve overall quality rating; these plans would receive, on average, an additional $181 per-member-per-year from Medicare. Thus, the expected increase in per-member-per-year payments from diabetes treatment intensification was $1.92. **CONCLUSIONS:** Treatment intensification would reduce A1C levels for a large share of patients with uncontrolled T2D, but only a small proportion of plans will receive additional reimbursement. Policy-makers that aim to link quality with reimbursement may want to reconsider whether these payment algorithms provide the desired incentives for plans to improve quality of care for chronic diseases such as diabetes.

PDB81

E-HEALTH APPROACH TO STIPULATE THE DIABETIC PATIENT CARE AND MANAGEMENT

Kumar N, Gupta BK

Shri Ramswaroop Memorial University, Barabanki, India

OBJECTIVES: E-Health is becoming an imperative approach to stipulate the diabetic patient care and management. In this study we tried to get an overview for application of cellular phone text messaging over adolescent diabetic patients (ADPs). The major objective of this study was to test whether adding cellular application for patient care compared with control cases would reduce Glycated Hemoglobin (HbA1c). **METHODS:** Eleven ADPs (study cases, n=11) were selected for mobile phone coaching through text messaging, to consultants. ADPs of the control site (n=09) were continued with their standard diabetes health care from consultants. Primarily ADPs were enquired for demographic and social characteristics, frequency of cellular phone use, general health information and diagnosis of type 2 diabetes. Further the level of Hb1Ac, in both the groups, was measured in a regular interval of 45 days. After 225 days, percentage of mean improvement in Hb1Ac level was compared between cellular users and control cases. **RESULTS:** More than 3% improvement in Hb1Ac was observed among the patients having mobile phone and they made regular interaction with consultant. The differences were very small but a trend of positive improvement was observed among ADPs using cellular phone's text messaging. **CONCLUSIONS:** Result indicated that info-diabetic approach may contribute to minimize complexities in medical care and the cautious use of cellular phone technology in the form of text messaging would be an asset for self care management in ADPs.

PDB82

INSIGHTS FOR CARE: USING REAL-WORLD DATA TO QUANTIFY DIABETES TREATMENT PATTERNS AND OUTCOMES IN AN URBAN HEALTH ECONOMY

Chapman D[1], Song S[1], Foxcroft R[1], Bidgoli F[2], Ronte H[1], Bellary S[3]

[1]*Monitor Deloitte, London, UK,* [2]*Merck Sharp & Dohme Limited, Hoddesdon, UK,* [3]*Heart of England NHS Foundation Trust, Birmingham, UK*

OBJECTIVES: Insight for Care is a partnership between Heart of England NHS Foundation Trust (HEFT) (Birmingham, UK), Merck Sharp & Dohme Ltd and Monitor Deloitte to build a Real-World Evidence Lab for diabetes mellitus. Insights for Care links pseudonymised (non-identifiable) patient-level clinical and administrative data across an urban local health economy (LHE) in Birmingham. The Partnership is anticipated to operate for three years from November 2015, with quarterly data refresh to permit both retrospective and prospective studies. **METHODS:** Insights for Care captures pseudonymised patient-level administrative, clinical and prescribing information from 11 distinct primary, secondary, tertiary and community care datasets. These data are linked at patient pseudonym level, with all identifiable data removed, and analysed in a SQL/SAS environment. Economic burden to the healthcare system is estimated using a UK national commissioner view to better support data quality and generalisability. **RESULTS:** The dataset covers over 220,000 local health economy patients diagnosed with diabetes since 2008, with 81,000 of these using core hospital services at HEFT. The patient demographic profile (50% aged 65 or over, 52% male, 50% from the bottom quintile of the Index of Multiple Deprivation) is typical of a diabetes population, with a high proportion from BAME backgrounds (30%). Clinical biomarkers are well-represented, with large quantity of readings including over 1.1 million HbA1c records, 1.3 million eGFR records and 0.8 million blood cholesterol records. Of those who have visited HEFT, over 40% has at least one diabetes-related comorbidity, with 18% exhibiting multiple comorbidities. **CONCLUSIONS:** IfC represents a large, high quality database for studying diabetes in an urban health economy. Output from analysis can be used to better understand the local patient population and care pathways, identify areas for service redesign and underpin future clinical or health economics studies, both for the LHE and for other healthcare providers and policymakers.

PDB83

ASSESSMENT OF ENDOCRINOLOGISTS ABOUT DRUGS PRESCRIPTIONS FOR THYROID DISEASE PHARMACOTHERAPY IN UKRAINE

Vadziuk I

Ivan Horbachevsky Ternopil State Medical University, Ternopil, Ukraine

OBJECTIVES: To obtain reliable information about the range of drugs used for pharmacotherapy of thyroid disease in Ukrainian hospitals. **METHODS:** Method of expert assessment is based on a complex of logical and mathematical-statistical analysis that allows to bring personal expert opinion into collective. Analyzed information is a basis for decision making. As object of research we chose primary information from questionnaires of expert assessments. The choice of drugs that were included into questionnaires was based on the basis of clinical protocols of care for patients with thyroid pathology, National Formulary of medicines in Ukraine (sixth edition). As experts were 65 endocrinologists from different medical institutions of Ukraine. **RESULTS:** Based on determination of coefficient competence (Cc) into our formed team of experts were included questionnaires of 60 specialists (Cc ≥ 1.5). We found that out of 35 drugs listed in questionnaire, doctors using in their practice 32 (91.4%). But only 20 drugs are prescribed by 30% of experts. Among the most important feature of drugs that affect prescriptions, doctors have identified the effectiveness of drugs (83%), followed - absence of side effects (43%). The prestige of trade name has a minimal value for endocrinologists (17%). Also it was found that most doctors give preference to information about drugs from materials of scientific conferences and to medical representatives. The least attention is paid to the National Formulary of medicines in Ukraine. **CONCLUSIONS:** Not full use of nomenclature drugs by doctors may be caused by insufficient informing of available medicines on the pharmaceutical market of Ukraine. The quality of treatment and prevention of such socially significant disease as thyroid pathology largely depends on the availability of drugs.

PDB84

INSULIN INITIATION FOR TYPE 2 DIABETES MELLITUS IN CHINA: PHYSICIANS' PREFERRED HBA1C LEVEL AT INSULIN INITIATION AND PATIENTS' OBSERVED LEVELS

Wang K[1], Chen Y[1], Hou J[1], Siddall J[2]

[1]*Lilly Suzhou Pharmaceutical Company, Ltd., Shanghai, China,* [2]*Adelphi Real World, Bollington, UK*

OBJECTIVES: To examine the HbA1c level at insulin initiation for type 2 diabetes mellitus (T2DM) by examining Chinese physicians' stated preference and the actual HbA1c levels of patients in clinical care. **METHODS:** Data are from the Diabetes Disease Specific Programme, designed by Adelphi Real World and conducted in 9 Chinese cities (Beijing, Shanghai, Guangzhou, Hangzhou, Nanjing, Chengdu, Wuhan, Shenyang, and Xi'an) from October 2011 to March 2012. Endocrinologists, diabetologists, and internal medicine physicians who treat diabetes at general hospitals in China were recruited. The survey collected information from physicians and up to 12 consecutive patients with diabetes for each physician. This analysis was limited to T2DM patients who had initiated insulin treatment. T-tests/one-way ANOVAs and chi-square tests were used for comparisons in continuous and categorical variables, respectively. **RESULTS:** Data from 190 physicians and 434 patients were included. On average, physicians stated they initiated insulin at an HbA1c level of 8.4% (SD=1.25%). Similar levels were endorsed by endocrinologists and diabetologists compared with internal medicine physicians (8.5% vs. 8.4%; P=0.86). In total, 44.2% of physicians endorsed initiating insulin at an HbA1c level ≥8.5%. Physicians from Tier 1 cities reported preferring to initiate insulin at a lower HbA1c level than Tier 2 cities (8.3% vs. 8.7%, P=0.035). However, among the 434 patients who initiated insulin, the average HbA1c level at initiation was 9.0% (SD=1.72), and 56.2% had an HbA1c ≥8.5%. **CONCLUSIONS:** In China, physicians endorsed initiating insulin treatment for patients with T2DM at an average HbA1c level of 8.4%, but the actual HbA1c level was higher (9.0% on average). Findings suggest a gap exists in clinical practice between physicians' preferred HbA1c level and patients' observed HbA1c levels at insulin initiation. Earlier initiation of insulin when HbA1c treatment targets are not being met may slow progression of T2DM and lead to better patient outcomes.

INFECTION – Clinical Outcomes Studies

PIN1

PREVALENCE AND SURVIVAL TRENDS OF HEPATITIS C POSITIVE PATIENTS CO-INFECTED WITH HIV IN A TERTIARY CARE HOSPITAL MALAYSIA

Akhtar A[1], Khan AH[2], Syed Sulaiman SA[3], Soo CT[4]

[1]*University of the Punjab, Lahore, Pakistan,* [2]*Universiti Sains Malaysia, Pulau Penang, Pakistan,* [3]*Universiti Sains Malaysia, Minden, Malaysia,* [4]*General Hospital Penang, Pulau Pinang, Malaysia*

OBJECTIVES: The existing literature suggests that Hepatitis C (HCV) with or without Immunodeficiency Virus (HIV) shared common routes of transmission and major public health problems throughout the world. Globally estimated rate of infections caused by Hepatitis C was 130 million with an overall prevalence of 3% and about 4 to 5 million people are co-infected with HIV. The main aims and objectives of the current study are to evaluate the prevalence of Hepatitis C (HCV) among HIV positive patients and survival trends among cited co-infected patients. **METHODS:** The present study includes 808 HIV positive patients from infectious disease unit in a retrospective, cross-sectional study from 2007 to 2012 conducted at Hospital Pulau Pinang (HPP). Data were collected through a validated data collection form. **RESULTS:** HCV prevalence was found 18.4% among the study population including 122 (17.2%) males and 8 (1.1%) females. Malays accounted for 76 (10.7%) patients in majority among HIV-HCV co-infected patients followed by Chinese 36(5.1%) and Indians 14 (2.0%). In survival trends of HIV-HCV co-infected patients higher survival rates was found in patients below 40 years of age ($p = 0.028$) and non-intravenous drug users ($p = 0.048$). Prevalence of triple infection (HIV-HBV-HCV) was found to be 2.4% in the study population. **CONCLUSIONS:** The overall prevalence of HCV among HIV positive individuals is relatively high in the current study population. Higher survival rates were found in males, non-intravenous drug users and below 40 years of age patients in survival trends of HIV-HCV co-infected patients.

PIN2

DIAGNOSIS, ASSESSMENT, AND MANAGEMENT OF URINARY TRACT INFECTIONS IN ASSISTED LIVING FACILITY RESIDING POSTMENOPAUSAL WOMEN WITH DEMENTIA: A RETROSPECTIVE REVIEW

Varghese Gupta S, Dharia S, Shaeer K

University of South Florida, Tampa, FL, USA

OBJECTIVES: In the case of women with dementia, management of UTI is challenging due to improper clinical assessment, leading to misdiagnosis and unnecessary use of antibiotics. Furthermore, the presentation of agitation, increased confusion, and delirium with a UTI in this population may lead to the misdiagnosis of worsening dementia. The purpose of this study is to assess the criteria utilized to diagnose urinary tract infections and evaluate the appropriateness of the prescribed antibiotic therapy in elderly women with dementia residing in assisted living facility. **METHODS:** A 5-year chart review of dementia patients residing in a mid- to