centage of patients aged 65–74 years with comorbidities was 52.9% higher than people aged 25–34 years old (p < 0.05). For all cohorts, regardless of age, one of four patients with T2D coincides with hypertension, one of ten patients with T2D coincides with hyperlipidemia, and one of three patients with T2D coincides with both hypertension and hyperlipidemia. In 2003, the frequency of physicians' visits for T2D patients with hypertension and hyperlipidemia was 2.3 times higher than for T2D patients without comorbidities (p < 0.01). In terms of T2D comorbidities, a major trigger for physicians to prescribe a drug is the coexistence of both hypertension and hyperlipidemia. **CONCLUSIONS:** The analysis of T2D incidence trends demonstrates that developing disease management strategies for physicians should include in their judgment, the fact that in a majority of cases, patients have T2D coinciding with cardiovascular diseases and hyperlipidemia.

PDB7

CLINICAL JUDGMENT OF DRUG THERAPY FOR TYPE-2 DIABETES PATIENTS AND RESULTS OF HBA1C TESTS

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OBJECTIVE: The goal of this study is to evaluate physicians' prescribing behavior based on the results of Hb1Ac tests for patients with type-2 diabetes. **METHODS:** The study design was retrospective covering the 12-month longitudinal period June, 2003 through May, 2004. We used a three-month look back period and a three-month look forward period for the validation of pre and post test (HbA1c) therapy. The study was based on the analysis of electronic CMS1500 claims for 33,764 unique patients (HIPAA compliant) and their results from the most recent HbA1c tests. Patients' medication was assessed through NCPDP electronic claims utilizing NDC codes and drug classes. Analysis included calculations of descriptive statistics and regression modeling. **RESULTS:** The high level of HbA1c was discovered during laboratory testing where a higher percentage of patients without medication were placed on medication. In particular, within a category of patients with HbA1c greater than or equal to 9 mg/dL, this switch occurred 32.1% more frequently then within a category of patients with HbA1c less than 7 mg/dL (p < 0.01). For patients with HbA1c greater than or equal to 9 mg/dL, the likelihood to change an existing therapy was 64.2% higher than for patients with HbA1c less than 7 mg/dL (p < 0.01). Also, for people with a high level of Hb1Ac, the likelihood to switch from monotherapy to polytherapy was 1.6 times higher than for people with a low level of testing. **CONCLUSIONS:** For patients with type-2 diabetes, a level of Hb1Ac is one of the important predictors of change in a physician's prescribing behavior. High levels of HbA1c most likely will cause a switch from just a dietary and exercise regimens to additional medication component.

PDB8

PREVALENCE OF DIABETES MELLITUS AND TREATMENT PATTERNS BASED ON CLASSIFICATION OF BODY MASS INDEX AMONG ADULTS

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OBJECTIVES: To examine trends of diabetes mellitus (DM) prevalence in adults and to investigate treatment patterns and HbA1c control according to their body mass index (BMI) classification. **METHODS:** This study used the Third National Health and Nutrition Examination Survey (NHANES III for 1988–1994) and NHANES 2001–2002, representing a national sample of the non-institutionalized civilian US population. Study patients were identified if they were ≥20 years old, were previously diagnosed with DM by a physician or is currently using DM therapy (insulin or a hypoglycemic agent). DM patients were classified as normal (BMI < 25), overweight (BMI: 25–29), or obese (BMI ≥ 30). Data were analyzed using SAS and SUDAAN statistical software. **RESULTS:** The age-adjusted prevalence of DM significantly increased from 5.4% in 1988–1994 to 7.1% in 2001–2002 (increase of 1.7%: p < 0.05). In 2001–2002, DM was more prevalent in overweight patients (6.1%) and obese patients (10.5%) than in normal weight patients (4%). These trends were similar in 1988–1994. More DM patients (80% of overweight and 87% of obese patients) received treatment in 2001–2002 than during 1988–1994 (70% and 78%) (increases: p = 0.05 respectively). Patients were treated with oral antihyperglycemics only most frequently (56%), followed by insulin only (17%), and with both insulin and an oral agent (9%). Overall, mean HbA1c decreased from 7.7% (57% of DM-patients: HbA1c ≥ 7%) in 1988–1994 to 7.5% (50% of DM-patients: HbA1c ≥ 7%) in 2001–2002 (p = 0.24). **CONCLUSIONS:** Over the past decade, DM has become more prevalent in US adults, more overweight and obese DM patients have received treatment, yet 20% of overall DM patients still have not received treatment. In 2001–2002, half of diabetic patients did not control their HbA1c level and diabetic patients who were obese were less likely to control their HbA1c compared to patients who were normal weight.

PDB9

FACTORS ASSOCIATED WITH A LOWER GLYCOSYLATED HEMOGLOBIN A1C (A1C) IN A DIABETIC LATINO POPULATION

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OBJECTIVES: To investigate the association between a lower A1c (a measure of better diabetes control) and multiple health system and individual variables in a Latino population. **METHODS:** Data were obtained from the Los Angeles Latino Eye Study (LALES) and included 6980 participants who were >40 years old. Subjects with a physician diagnosis and those without were stratified and compared. Continuous variables were summarized using means, standard deviations and T-tests. Categorical variables were summarized using frequency tables and Chi-square tests. Multivariate linear regression was performed on subjects with diabetes. P-value less than 0.05 were considered statistically significant. **RESULTS:** There were 1095 subjects with DM resulting in a prevalence of 18%, 73.0% of subjects were married or living with their partner, 43.4% of subjects were males, 65.9% of subjects had insurance coverage, and 3.8% of the subjects without a diagnosis had A1c values that were above the diabetic goal, indicating probable diabetes disease. Diabetics were older than non-diabetics (57.8 vs. 53.9; p < 0.0001), insured (73.9% vs. 64.2%; p < 0.0001) and had a higher percentage of individuals with a household income less than $20,000 (55.8% vs. 49.6%; p = 0.0002). In total, 57.4% of diabetics were using oral anti-diabetic medication alone, 5.9% were using insulin alone, 3.6% were using diet alone and 15.3% were using a combination of oral medication and insulin. Multivariate linear regression analysis (R2 = 0.1225, p < 0.0001) showed that being older, single, insured, male and a lower income was associated with a lower A1c. Also fewer disease years, higher BMI, on diet vs. combination treatment were associated with a lower A1c. How much the subjects have adopted the American culture, expressed as an acculturation score, was not significantly associated with A1c. **CONCLUSIONS:** Though this study did not measure severity of disease and medication

adherence, some factors associated with better diabetes control were identified.

ECONOMIC BURDEN OF DIABETIC RETINOPATHY IN FLORIDA: A PILOT STUDY EXPLORING THE AMOUNT SPENT USING PRINCIPLE DIAGNOSES

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OBJECTIVE: The objective of this study is to determine the direct medical costs associated with patients who have diabetic retinopathy and their co-morbidities in the state of Florida. **METHODS:** The study was a non-randomized, secondary data analysis using the Florida Ambulatory Patient Data from 2001. It was a cross-sectional analysis using the individual patient as the unit of analysis. The ICD-9 Code 362.02 was used to extract patients with a principle diagnosis of proliferative diabetic retinopathy (PDR). The ICD-9 Codes 362.01 and 362.10 were used to extract patients with a principle diagnosis of nonproliferative diabetic retinopathy (NDR). ICD-9 Code 362.83 was used to extract patients with macular edema (ME). Patient characteristics along with total charges were extracted for each of these patients. **RESULTS:** The total charges for Asian, African American, and White Hispanic are significantly lower than the total charges for Caucasians. However, Black Hispanics have a statistically significant higher total charge than Caucasians. Patients with Medicare, Medicare HMO, Medicaid, commercial HMO, and commercial PPO, have statistically significant higher total charges than patients with commercial insurance. Both PDR and BDR are associated with statistically significant greater total charges than patients with NDR. Yet, the total charges for ME are significantly lower than those for NDR. This model is statistically significant. **CONCLUSIONS:** Total charges are affected by patient characteristics and severity of diabetic retinopathy. In the state of Florida for 2001, $3,885,952 were spent on treating patients with diabetic retinopathy and their co-morbidities in the ambulatory setting.

EVALUATION OF THE CLINICAL OUTCOME AND FINANCIAL COSTS OF DELAYING THE ONSET OF FRANK TYPE-2 DIABETES

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OBJECTIVE: Type-2 diabetes (T2DM) is associated with increased morbidity and mortality; however, the onset can be delayed. This study quantified the impact of delaying the onset of frank diabetes on the rate of progression to vascular complications and all associated costs. **METHODS:** The Cardiff Diabetes Simulation Model was run over a 20-year time horizon following a cohort of 1000 newly diagnosed T2DM patients compared to a cohort whose T2DM was delayed by two or ten years. The model utilised the Framingham equations to predict cardiovascular events before diabetes and the UKPDS equations following diagnosis. The transition of predicted risk from Framingham to the UKPDS risk level was modelled assuming an instantaneous switch (Scenario 1) or a linear-progression between risk equations (Scenario 2). Direct health care costs [2004, GBP] and outcomes were each discounted at 3.5%. **RESULTS:** Assuming no delay in diabetes, the model predicted 501 myocardial infarctions (MI's), 252 strokes and 2505 microvascular events. Mean costs and quality adjusted life years (QALY's) per subject were £11,972 and 7.3 years, respectively. Mean costs savings ranged from −£2376 to −£4791 (Scenario 1) and −£123 to −£573 (Scenario 2) through delaying diabetes by two and ten years, respectively. Mean change in QALY's ranged from 0.6 to 1.7 years (Scenario 1) and 0.1 to 1.2 (Scenario 2), respectively. The number of MI's avoided ranged from 40 to 224; while the predicted number of strokes avoided ranged from 37 to 147 for a two-year and ten-year delay, respectively. **CONCLUSIONS:** This study demonstrated that even modest delays in the onset of diabetes can have a substantial impact on predicted vascular events and financial costs. However, the magnitude of this impact was highly dependent upon the modelling assumption employed relating to the change in cardiovascular risk as people progress to frank T2DM.

EFFECT OF GLYCEMIC CONTROL ON HEALTH CARE COSTS

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OBJECTIVE: Glycosylated hemoglobin (HbA_{1c}) is a well-established measure of glycemic control. Understanding the impact of staying at target HbA_{1c} levels ($\leq 7.0\%$) on treatment costs would be of great significance to managed care organizations. The goal of this study was to determine whether being at target HbA_{1c} results in reductions in diabetes-related costs. **METHODS:** This study was a retrospective database analysis using eligibility, medical and pharmacy claims data, and laboratory data from a large US health care organization. Subjects were included in the study if they had two or more claims for type-2 diabetes and at least one HbA_{1c} value during the period January 1, 2002 through December 31, 2002 (first such date identified as index date). Subjects with two or more claims for type-1 diabetes were excluded from the study. Study subjects were divided into those at target HbA_{1c} ($\leq 7.0\%$) and above target HbA_{1c} ($>7.0\%$) and were followed for a period of one year following their index date. Demographic, clinical and cost variables were extracted for each subject. Multiple linear regression analysis was used to compare treatment costs between subjects at target level and subjects above target level. **RESULTS:** A total of 3121 subjects were identified as being continuously at target level and 3659 subjects were identified as being continuously above target level. The target group was associated with 30% lower total diabetes costs ($p < 0.01$) after controlling for the confounding factors (age, gender, health plan region and presence of co-morbid conditions). The predicted total diabetes costs in the target group was $1171 and the predicted costs in the above target group was $1540. **CONCLUSION:** Results of this analysis suggests that staying at target HbA_{1c} level was associated with cost savings over a one-year follow-up period in a managed care setting.

COST OF DIABETES COMPLICATIONS IN FRANCE, GERMANY, ITALY AND SPAIN

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OBJECTIVES: To collect cost data on the complications of diabetes from published sources in France, Germany, Spain and Italy for use in a peer-reviewed, validated diabetes model. **METHODS:** A search for published cost of diabetes complications data was performed in peer-reviewed journals listed in PubMed and ISPOR conference proceedings from the last ten years. Where country-specific data were not available, we referred to government websites and local cost experts. Identified costs were inflated to 2004 Euros (€). Major complication