costs and/or health-related quality of life. The following complications were selected: cardiovascular disease, peripheral neuropathy, renal disease, cataract, hypoglycemic coma, ketoacidosis and other complications. Since 2003, 281 reports of 72 studies (including many large, observational studies) have been published. These reports have substantially increased the available evidence describing complications in T1DM patients. The DCC/TEDC studies uniquely evaluate the patient follow-up (not part of a T2DM study) aged using strategies that are reasonably representative of contemporary T1DM management.

**PDB20**

**SAFETY OF PREOPERATIVE VITAMIN D REPLACEMENT IN MILD PRIMARY HYPERPARATHYROIDISM WITH VITAMIN D DEFICIENCY: A META-ANALYSIS**

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**OBJECTIVES:** To assess the safety of preoperative vitamin D replacement in mild primary hyperparathyroidism. **METHODS:** Data were searched from Medline, Embase, Cochrane CENTRAL and abstracts form annual scientific meetings of various international bone and mineral societies. Studies examining the effect of preoperative vitamin D replacement in patients with mild primary hyperparathyroidism (serum calcium <12mg/dl), irrespective of year and language of the publication were included in the present meta-analysis. Data were extracted from text of the included publications or abstract of conferences. **RESULTS:** The pooled mean difference for serum calcium, phosphate, intact parathyroid hormone levels and urinary calcium excretion before and after vitamin D replacement in mild primary hyperparathyroidism were 0.06mg/dl (95% CI, -0.11, 0.23, Z = 0.48, P = 0.63), -0.01 mg/dl (95% CI, -0.14, 0.13, Z = 0.12, P = 0.91), 17.18µg/ml (95% CI, 1.26, 33.11, Z = 2.19, P = 0.03) and -0.02 µmol/l (95% CI, -0.10, 0.06, Z = 2.36, P = 0.02), respectively. **CONCLUSIONS:** Preoperative vitamin D replacement in subjects with mild primary hyperparathyroidism and vitamin D deficiency is safe. This meta-analysis supports the recommendation on replacement of vitamin D in subjects with primary hyperparathyroidism and vitamin D deficiency by the third international workshop on diagnosis of asymptomatic primary hyperparathyroidism.

**DIABETES/ENDOCRINE DISORDERS - Cost Studies**

**PDB21**

**CHART AUDIT AND BUDGET IMPACT ANALYSIS OF PASIREOTIDE VERSUS SECOND- LINE THERAPIES IN THE TREATMENT OF CUSHING’S DISEASE IN GERMANY**

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**OBJECTIVES:** Pasireotide is a novel, injectable multireceptor-targeted somatostatin analogue that binds with high affinity to four of the five somatostatin receptors. It has been commercially available in Europe since May 2012 and is the first pituitary-targeted medical therapy indicated for adult patients with Cushing’s disease (CD) for whom surgery has failed or is not an option. This analysis aims to quantify the budget impact (BI) of utilizing pasireotide as second-line therapy in CD in Germany. **METHODS:** A thorough chart audit was conducted to analyze resource utilization and market shares of standard of care in CD. Epidemiology, treatment response comparisons and adverse event (AE) data were derived from published literature. Pasireotide data were taken from a Phase III clinical trial. German tariffs for each resource were then applied to an Excel-based model to compare utilization and costs with and without the introduction of pasireotide (net BI) for patients with CD over a 5-year horizon from the German health care system. **RESULTS:** Applying the BI of utilizing pasireotide as second-line therapy in CD, it was projected that the CD patient population in Germany would experience a 29.7% reduction in healthcare costs over a 5-year horizon. **CONCLUSIONS:** The introduction of pasireotide into the German health care system will result in clinical benefits for CD patients associated with a limited and predictable BI.

**PDB22**

**POTENTIAL BUDGET IMPACT OF LINAGLIPTIN IN FRANCE ESTIMATED FROM CURRENT-USE/PHASE III PATIENTS PEPFAR/HIV 4 INHIBITORS PRESCRIPTIONS**

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**OBJECTIVES:** Linagliptin is a new oral hypoglycaemic agent (OHA) from the class of dipeptidyl peptidase 4 (DPP-4) inhibitors, mostly excreted by biliary pathway that has no contra-indication in renal impaired patients. Linagliptin in indicated for dual therapy (add on to metformin) and for triple therapy (add on to metformin and Sulfonylurea). **RESULTS:** The aim of this study is to estimate the potential budget impact of linagliptin (either as the OHA or in combination with metformin) from the most current DPP-4 inhibitor prescribing patterns. **METHODS:** A budget impact model was developed from a French payer perspective. The model focused on drugs and insulin administration costs. Three prescription patterns were considered for linagliptin treatment initiation: substitution without treatment intensification, substitution with treatment intensification and initiation in naive patients. Treatment initiation data were obtained via retrospective analysis of 2011 prescribing data from the Thales database. DPP-4 inhibitors latest entrants ( saxagliptin/ vildagliptin-metformin combinations) were used as benchmark for linagliptin. For analylasis, the daily cost of linagliptin was assumed at market average (11.19€/day exactory). **RESULTS:** Considering a virtual cohort of 10,000 patients treated with linagliptin (with or combination with metformin), the whole treatment cost over 5 years would be 21,717 € compared with 18,996 € for a cohort of the patients treated with current alternatives. Benefes were observed among patients receiving triple therapy mainly because of competition with substitution of more expensive drugs such as GLP1 analogues and insulins. Sensitivity analysis showed that deploying the “add on to insulin indication” could reduce the budget impact up to 8 %. **CONCLUSIONS:** The estimated budget impact of linagliptin will be close to neutrality, as around 8.7% of linagliptin costs are already offset by substitutions, based on conservative assumptions.
OBJECTIVES: To evaluate the health care costs for the management of diabetes alongside other co-morbidities condition before and after counseling. METHODS: A Prospective interventional study was conducted in the community setup of Warangal, India for a period of four months. Only the educated Diabetic patients with other comorbidities were enrolled in the study. The data collected were cost of medicines, consultation fee, transportation cost. The average total health care cost was calculated based on the previous two months expenses of each patient before and after counseling. RESULTS: A total of 100 patients were evaluated in the study period. Out of 100 patients, majorities were in the age group of 41-60 yrs (66.6%) and men (63.8%) followed by women 37.3%. Most of the patients were diabetes with hypertension, dyslipidemia. The average cost of medications per patient Rs. 1540(72.81%), the average doctors consultation fee per patient Rs.175(8.27%), the average transportation cost per patient Rs. 500(24.56%). The most common drugs prescribed in the study were Metformin, Glibenclamide, Gliclazide, Insulin, Ramipril, Amlodipine, Telmisartan, Metoprolol, Hydrochlorothiazide, Furosemide, Atorvastatin and Aspirin. The most common laboratory test includes FBS/PPBS/ RBS/HbA1C, lipid profiles, urine analysis, Hb, Electrolytes and Sr.Creatinine. The average total health care cost for two months before and after counseling was found to be Rs 2115 and Rs 1755 per patient. CONCLUSIONS: In summary this is the first Indian health care study conducted in the community setup. Our study result shows that there is decreased cost for the management of diabetes along with other co-morbidities condition after the counseling by 17% to 18% after the two months follow up. So more prevention efforts and resources are required to reduce this burden and to provide basic diabetes care in the low- and middle-income countries.

PD26
EFFECT OF DIABETES DISEASE MANAGEMENT PROGRAMS BASED ON BUNDLED PAYMENT ON CURATIVE HEALTH CARE COSTS IN THE NETHERLANDS
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OBJECTIVES: With the introduction of the bundled payment model in 2007, a large number of disease management programs (DMP) were initiated in the Netherlands. It is hypothesized that bundled payment will improve the quality of care and encourage tasks delegation and substitution. As result, health care costs may decrease resulting in efficiency improvement of diabetes care. METHODS: We analyzed a total of 24 different diabetes insurance agreements in the Netherlands using data of Vektis. Data of 52 care groups, covering about 50% of the diabetes type 2 population were used. In total, 61,497 diabetes type 2 patients, clustered in 3078 GPs, were analyzed in a longitudinal multi-level design. For two years 32% of the patients (or their GPs) were enrolled in a DMP based on bundled payment and 21% in a DMP based on management fee whereas the patients of the control group (47%) stayed in ‘care-as-usual’ (CAU). RESULTS: Results show increasing curative health care costs of Euro 219 per patient from 2008 to 2009. While controlling for age, sex, comorbidity, and costs at baseline (average yearly costs in 2008 were Euro 4123), the average costs per patient enrolled in DMP based on bundled payment increased with Euro 288 more compared to CAU. The increase of costs of DMP based on management fee was not significant different from CAU. The increase in costs did not vary between health insurance agencies or GPs. Sensitivity analysis was conducted with a much smaller and therefore less useful 3-year data set. Substantive conclusions remained the same. CONCLUSIONS: Results showed an increase in curative health care costs of diabetes patients caused by DMP based on bundled payment over a period of 2 years. Further research should investigate a long time-span to study long-term effects of DMP on costs.

PD27
THE RELATIONSHIP BETWEEN THE PRESENCE OF METABOLIC COMPLICATIONS AND COST COMPONENTS OF TYPE 2 DIABETES MELLITUS PATIENTS IN TURKEY
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OBJECTIVES: An update of health economics analysis of type 2 diabetes mellitus (T2DM) in adult population in Turkey was performed. The relationship between presence of metabolic complications and cost components is reported in this presentation. METHODS: Forty centres were selected from the list of centres in which adult T2DM patients were followed on routine basis. These centres were representative of the country, since they were selected by two stage cluster sampling. Medical files were reviewed for two to five years prior to the study. Collected data included health care utilization items (medical and surgical treatments, laboratory tests, inpatient/outpatient visits, consultations and patient education). Item prices were obtained from the Ministry of Health and Social Security Organization of Turkey (19–2 3210 Turkish Liras, Feb 2012). RESULTS: A total of 942 patients’ data were included in the analysis. In 63.7% of the patients, no visits related to any diabetic complication had been recorded, thus these patients were regarded as patients without complication. The proportion of patients with more than two complications was 7.9% and 2.6%, respectively. Total annual cost, which was found to be 324.76 in patients with no systemic complication increased to 512.78$, 641.94$, 817.84$ and 1835.06$ with increasing number of systems involved (from one system to four systems). CONCLUSIONS: The cost of patients related to metabolic complications systems involved by diabetic complications. Since the prevalence of DM is quite high and is further increasing, prevention and/or delay of complications will be crucial to reduce the economic burden of diabetes on the general health care budget. [Integrating the costs from this analysis and the epidemiologic data from a recently updated local study (TURKIP-II), a burden of disease model will be developed and distributed soon].

PD29
GLYCEMIC CONTROL AND DIABETES-RELATED HEALTH CARE COSTS IN TYPE 2 DIABETES. A RETROSPECTIVE ANALYSIS BASED ON ADMINISTRATIVE AND CLINICAL DATA
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OBJECTIVES: Type 2 diabetes imposes a substantial economic burden on society. The objective of this study was to quantify the association between health care costs attributable to diabetes and level of glycemic control. METHODS: A retrospective analysis using a large administrative database and a clinical registry containing laboratory results was performed. Subjects, aged ≥ 45, were diagnosed for diabetes in 2008 and assigned to one of the 3 groups based on the percentage of HbA1c levels: good-control (≤ 7% over the 2 years of follow-up after diagnosis); 70%–60% (fair-control, 59%–40% (fair); 39%–20% (poor), <20% (very-poor). The cost attributable to oral antidiabetic drugs (OAD) and the direct cost due to hospitalizations or outpatient services for diabetes or cardiovascular disease were analyzed. Multivariate analysis was used to control for differences in potential confounding factors including age, sex, use of dyslipidemia drugs, use of hypertension drugs, previous cardiovascular disease and OAD adherence level among the study groups. RESULTS: Of 8,123 patients included, HbA1c control was excellent in 2,359 (29.0%) patients, good in 870 (10.7%), fair in 853 (10.5%), poor in 998 (12.3%) and very-poor in 3,043 (37.5%). Adherence to OAD was higher among suboptimal gly- cemic control patients (45.3% in the excellent-control group to 63.9% in the very-poor-control group). Over 2 years, the mean diabetes-related cost was: €1,947.56 in the excellent-control group; €2,030.68 in that with a good-control, €2,241.33 with a fair-control; €2,489.04 with a poor-control; €2,216.75 with a very-poor-control. After adjustment, the estimated excess cost associated with good-control, fair-control, poor-control and very-poor-control was €207.65, €198.49, €417.81 respectively. CONCLUSIONS: From this study showed a sub-optimal glycemic control. This analysis indicates that the diabetes-related costs are significantly higher for individuals who have a poor glycemic control compared with those patients who have an excellent glycemic control.

PD30
THE PATTERN AND PRESCRIPTION COST AMONG DIABETIC PATIENTS IN THE HOO MUNICIPAL HOSPITAL, VOLTA REGION, GHANA
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OBJECTIVES: The objective of this study was to analyze the pattern and cost of medicines prescribed at a diabetic clinic in Ho Municipal Hospital, Volta Region, Ghana. METHODS: Cross sectional in design. A retrospective sampling procedure was used to collect data. 100 computer generated prescriptions were randomly selected from the computer database of the diabetic clinic in Ho Municipal Hospital between the periods of January 1 to December 31, 2011. With the aid of Excel and SPSS (vers 20), the data generated was analyzed and appropriate measures of cen-