matched sample of patients with HbA1c greater than or equal to 7%, for a difference of $2,713 [$285 - $5,140]. In contrast, when we examined the change in cost from 2006 to 2009 for patients who had sustained levels of HbA1c at <7% for all 3 years, we found that total cost care for patients with sustained control decreased by $2,207 compared to a $3,006 increase for patients without sustained control, for a difference of -$5,214, 95%CI[-$10,163 - -$264]. **CONCLUSIONS:** Our study suggests that while reducing HbA1c levels to target goals may not immediately result in cost reductions, sustained HbA1c control is likely to reduce costs in a three-year time frame.

PDB42

HEALTH CARE RESOURCES UTILIZATION AND COST FOR HYPOGLYCEMIA AND METABOLIC ACIDOSIS IN TYPE II DIABETES: AN ANALYSIS OF THE RAMQ DATABASE

Lachaine J[1], Beauchemin C[1], Flavin J[2]
[1]*University of Montreal, Montreal, QC, Canada,* [2]*Boehringer Ingelheim Canada Ltd, Burlingon, ON, Canada*

OBJECTIVES: Diabetic patients with chronic renal failure are at risk of developing hypoglycemia and metabolic acidosis. The purpose of this study was to estimate the health care resource utilization and costs associated with these complications. **METHODS:** Patients covered by the Quebec provincial drug reimbursement program (RAMQ) who had a diagnosis of diabetes, had used a hypoglycemic agent, and who had experienced hypoglycemia or metabolic acidosis in the period from January 2005 to December 2010 were selected. Health care resources in terms of physician visits, hospitalization, intensive care unit stay, hospital outpatient clinic visits, and emergency room visits were estimated for the 10-day period before and the 30-day period after a complication event. The resources consumed during a 40-day period one year before the event, corresponding to a period without any complication event, was deducted to estimate the incremental costs associated with these complications. **RESULTS:** A total of 4889 patients had a diagnosis of diabetes with chronic renal failure (average age 69.2 years (SD=10.1)). Of these, 530 (10.8%) experienced a hypoglycemic event and 95 (1.9%) an episode of metabolic acidosis. Estimated incremental costs of medical resources were $3859 for hypoglycemia and $5019 for metabolic acidosis. In both cases, hospitalization was the major cost coponent: $2560 and $3065 for hypoglycemia and metabolic acidosis, respectively. **CONCLUSIONS:** A significant proportion of diabetic patients with chronic renal failure experienced hypoglycemia or metabolic acidosis, with substantial associated costs. Treatment options that minimize the risk of these complications should be considered.

PDB43

THE COST OF HYPOGLYCEMIA IN DIABETES: DEFINING THE SEVERITY OF THE HYPOGLYCEMIC EVENT IS KEY TO UNDERSTANDING THE ECONOMIC BURDEN

Chollet M[1], Briggs A[2], Brin S[1], Dain MP[1], Meneghini L[3], Bergenstal R[4]
[1]*Sanofi-Aventis, Paris, France,* [2]*University of Glasgow, Glasgow, UK,* [3]*Miller School of Medicine, Miami, FL, USA,* [4]*International Diabetes Center at Park Nicollet, Minneapolis, MN, USA*

Hypoglycemia is one of the limiting factors for achieving adequate metabolic control in diabetic patients. Although it is well accepted that the economic burden of diabetes is substantial, the financial impact of hypoglycaemia to patients, the health system and society is unclear.

OBJECTIVES: To assess the economic impact associated with hypoglycemic events through a search of the published literature in type 1 and type 2 diabetic patients using oral antidiabetes drugs and/or insulin therapy. **METHODS:** An in-depth literature review was conducted, EMBASE and PubMed databases were searched from 2005 to November 2011. A total of 24 US and European articles were retrieved. Costs were collected according to severity of hypoglycemia: symptomatic non-severe and severe hypoglycemia. **RESULTS:** Direct non-medical costs and indirect costs are studied for symptomatic non-severe hypoglycemia, as the economic impact is limited to lost work productivity, increased out-of-pocket costs mainly due to groceries, extra test strips and transportation services. The lack of consensus of the definition of severe hypoglycemia leads to great variation of published costs. Total costs per severe episode (direct/indirect costs), for patients requiring assistance from family members ranged from 30 to 63€, for patients needing medical attention but not admitted to hospital overnight ranged from 274 to 489€, and for patients requiring hospitalization ranged from 1306 to 3917€. US Study reported mean cost per severe episode of $1087. **CONCLUSIONS:** No clear consensus on the definition of severity of hypoglycemia was specified in the literature. Costs for symptomatic or non-severe hypoglycemia are sparse and a high variation in costs for severe hypoglycemia was observed. Hospitalization costs are the main cost driver for severe events. The evaluation of the economic burden of severe hypoglycaemia needs to consider the subcategories of assistance in order to reduce uncertainty in third payer point of view.

PDB44

DIFFERENCES IN UTILIZATION OF AND EXPENDITURES ON OFFICE-BASED HEALTH CARE BETWEEN UNINSURED AND INSURED CHILDREN 0-17 YEARS OF AGE FROM 2004-2008: RESULTS FROM THE MEDICAL EXPENDITURE PANEL SURVEY

Berry EA[1], Heaton PC[1], Fairbrother G[2], Hanseman D[3], Guo JJ[4], Kelton CM[5]
[1]*University of Cincinnati, Cincinnati, OH, USA,* [2]*Academy Health, Washington DC, DC, USA,* [3]*University of Cincinnati College of Medicine, Cincinnati, OH, USA,* [4]*University of Cincinnati Medical Center, Cincinnati, OH, USA,* [5]*University of Cincinnati College of Business, Cincinnati, OH, USA*

OBJECTIVES: To explain differences in number of and expenditures on office-based health care visits between insured and uninsured children. **METHODS:** Using four two-year panels from the Medical Expenditure Panel Survey (MEPS) from 2004-2008, a 1:1 nearest-neighbor-with-replacement case-control design (matching on age category, race, region, health status, change in health status, specific MEPS panel, and chronic condition(s)) was used to match a continuously (24-months) uninsured (case) with a continuously insured (control) child. The Wilcoxon matched-pairs test was used to compare the mean number of office visits and mean expenditures between cases and controls. Then, ordinary-least-squares regression models to explain the size of the difference between case and control were estimated, accounting for survey design. **RESULTS:** Out of the approximately 257 million (weighted total) children aged 0-17 across 4 MEPS panels, 4.13% had no health-insurance coverage over the 2-year panel, while 76.95% experienced continuous coverage. The average number of office visits for uninsured children was 0.07 (p-value < 0.01) less per month than that for insured children; mean expenditures on these visits per month was $11.57 (p-value < 0.01) less for uninsured children. Regression predictors with statistically significant coefficients included average healthcare status, change in health care status over the two-year panel, age category, race, income category, and region of the country. Children whose health status improved over the panel had a drop (p-value < 0.01) in the difference between case and control in office-based health care expenditure, relative to children whose health status remained steady. **CONCLUSIONS:** Utilization of and spending on office-based health care are significantly higher for children covered by health insurance. Moreover, the penalty for lack of insurance can be explained by important predictors including income, age category, and health status. The lack-of-insurance barrier for office-based visits may potentially also be a barrier for patient-centered medical homes.

PDB45

DIRECT MEDICAL COSTS OF DIABETES-RELATED COMPLICATIONS IN SAUDI ARABIA

Hnoosh A[1], Vega-Hernández G[1], Jugrin A[1], Todorova L[2]
[1]*IMS Health Consulting Group, London, UK,* [2]*Novo Nordisk International Operations, Zurich, Switzerland*

OBJECTIVES: Diabetes mellitus (DM) poses a serious public health problem worldwide and a substantial financial burden on each national health care budget. In Saudi Arabia, US$1.4 billion was spent on the treatment of DM in 2010, representing 21% of the national health care expenditure; it is expected to rise to US$3 billion by 2030. This study aimed to collect up-to-date direct medical costs of managing and treating DM-related complications to the Saudi public healthcare sector. **METHODS:** A literature review was conducted using EMBASE, Medline and the Cochrane Library databases. Data gaps were then addressed by searching grey literature and interviewing local expert physicians. Costs were categorised into six groups: management costs, cardiovascular complications, renal complications, acute events, eye-disease and neuropathy/foot ulcers which were presented as the first-year costs and in subsequent years following an event in 2011 US-dollars (US$1=SAR3.75). **RESULTS:** The highest first year costs were observed in the renal complications group: renal transplantation (US$62,571) and haemodialysis (US$40,000). High annual costs were also associated with the treatment of cardiovascular complications, ranging from US$8960 in the first year of treating myocardial infarction to US$1032 for inpatient follow up in subsequent years following an angina event. Other first-year costs of treating cardiovascular events were: stroke (US$5973), congestive heart failure (US$4992), and peripheral vascular disease (US$4891). The cost of an amputation procedure was US$3293, excluding the cost of prosthesis (US$320), with the cost of follow-up after amputation at US$1653. The cost of a laser eye procedure was US$928, while the cost of a cataract operation was US$1669. **CONCLUSIONS:** The costs of managing DM-related complications per patient could pose a significant financial burden on health care expenditure in Saudi Arabia. This study provided reliable, up-to-date cost data that can be used to conduct further economic evaluations of DM-related treatments in Saudi Arabia.

PDB46

DIRECT MEDICAL COSTS OF TREATING DIABETES RELATED COMPLICATIONS IN MEXICO

Vega-Hernández G[1], Jugrin A[1], Radford M[1], Bloomfield E[1], Todorova L[2], Hansen B[3]
[1]*IMS Health Consulting Group, London, UK,* [2]*Novo Nordisk International Operations, Zurich, Switzerland,* [3]*Novo Nordisk A/S, Soeborg, Denmark*

OBJECTIVES: Diabetes mellitus (DM) is a chronic and degenerative disease that is considered a public health problem in Mexico, having high impact on national health care expenditure. The economic burden of the disease has been estimated at 778 million US-dollars (2010). Treatment of complications represents 32.1% of the direct costs (110 million dollars) while pharmacological treatment represents 38.7%. The objective of this study was to collect up-to-date direct medical costs related to treatment of diabetes complications in Mexico. **METHODS:** A DRG costing approach was employed using recently published Mexican DRG tariffs. Data gaps were addressed using data from the literature or by interviewing local key opinion leaders. Annual drug-costs were calculated based on public prices (CompraNet). Costs were organized into 6 groups (management-costs, cardiovascular-complications, renal-complications, acute-events, eye-disease and neuropathy/foot ulcers). Values are presented in 2011 US-dollars as per event costs and classified into first-year and subsequent years of the event, using an exchange rate of 1 US$=12.975MXP. **RESULTS:** The highest first-year costs were observed in the renal-complications group (haemodialysis: US$33,627; peritoneal-dialysis: US$26,703, renal transplant: US$16,004). High costs were also associated with treatment of neuropathy (US$3040), infected foot ulcer (US$4718) and gangrene (US$1941). The cost of an amputation procedure was US$4769, excluding the cost of prosthesis (US$1515). Costs of treating cardiovascular complications ranged from US$6689 for stroke with death within 30 days to US$1,583 for annual inpatient