THE EFFECT OF INSULIN TREATMENT ON HEALTH CARE UTILIZATION IN TYPE-II DIABETES
Thiebaud P1, Nichol MB1, Patel BV2
1University of Southern California, School of Pharmacy, Los Angeles, CA, USA; 2MedImpact Healthcare Systems, Inc, San Diego, CA, USA
OBJECTIVE: To evaluate the effect of insulin treatment on health care utilization among type-II diabetics. More aggressive glucose control treatment, particularly with insulin, is known to slow diabetic patients’ disease progression. Does it also reduce health care utilization and cost in the short run? METHODS: Medical, pharmacy, and laboratory claims for 369 type-II diabetes patients enrolled in a single managed care plan were evaluated. Patients were continuously eligible for at least two years between June, 2001 and June, 2004. Separate variables were computed for each year. The propensity score (PS) calculated with classification and regression trees (C&RRT) was used to calculate the probability of receiving insulin treatment, using year one health status, demographics, and HgA1c laboratory values. These probabilities were then used as weights in the regression of total health care costs and ambulatory costs in year two on an array of variables including insulin use. RESULTS: Insulin treatment does not benefit all groups of patients equally. Patients over the age of 60 benefit significantly from insulin treatment with a reduction in total health care cost of 60.5% (p = 0.0007) and a reduction in ambulatory cost of 60.9% (p = 0.0008) compared to younger diabetic patients (age < 60). CONCLUSION: Diabetic patients age 60 or above and the health care payers would greatly benefit from better glucose control through insulin treatment.

TREATMENT PATTERNS AMONG PATIENTS WITH DIABETES ON METFORMIN AND SULfonyLUREA COMBINATION THERAPY
Pietri G1, Yin D2, Lyu R2
1Rutgers University, Piscataway, NJ, USA; 2Merck & Co, Inc, Whitehouse Station, NJ, USA
OBJECTIVES: Diabetes is a progressive disease that often requires periodic intensification of treatment to control hyperglycemia. The objective of this study is to evaluate therapy changes after initiation of metformin and sulfonylurea combination therapy. METHODS: This was a retrospective analysis of data derived from the IMS Mediplus UK primary care database. Patients were selected using the following criteria: type-2 diabetes diagnosis, age ≥30 years at diagnosis, initiation of OHA combination with MF and SU between January 1, 1997 and March 31, 2003. Patients with prior insulin prescription were excluded. RESULTS: A total of 6616 patients were included, with a mean age of 62.82 years (±12.12) and 56.3% of male; 2603 patients (39.39%) had a history of macrovascular events and 647 (9.79%) had microvascular events. Hypertension (78.39%) and dyslipidemia (59.89%) were also common among these patients. The average follow-up was about 36.7 months. After three years of initiating metformin and sulfonylurea combination therapy, 54.8% had changed their therapy, either by discontinuing one or both initial agents, adding a third oral agent or receiving insulin. No patient remained on the initial combination after 6.5 years. Approximately 8–11% of patients changed therapy every six-months during the first five-years. By the end of two years, about 14.1% have required insulin therapy and 10% had switched to another OHA combination therapy. Approximately 46.9% of patients were prescribed insulin therapy after seven-years. CONCLUSION: In this cohort of diabetic patients managed by GPs in the UK, a large number of patients require additional oral anti-hyperglycemic agents or insulin to manage their hyperglycemia. More effective therapies are needed in order to better manage these patients.

THE RELATIONSHIP BETWEEN PATIENT’S TYPE OF PAYMENT AND PRESCRIPTION DRUG COSTS FOR DIABETIC PATIENTS
Ngorsuraches S1, Sisang T2
1Prince of Songkla University, Hatyai, Songkla, Thailand; 2Maharaj Nakorn Sri Thammarat Hospital, Muang, Nakorn Sri Thammarat, Thailand
OBJECTIVE: To examine the relationship between patient’s payment type and prescription drug costs for diabetic outpatients at a regional hospital in southern Thailand. METHODS: Patient’s profile and prescription for 1454 outpatients who used anti-diabetic drugs between August and September 2002 were collected. RESULTS: Results showed that average drug costs per prescription between patients who paid out-of-pocket and patients who...
did not pay for their prescriptions were significantly different (p < 0.05). The average anti-diabetic drug cost of the patients who paid out-of-pocket was 643.38 Baht ($US 1 = 40Baht) and their average total drug cost was 1853.12 Baht, while the average anti-diabetic drug cost of the patients who did not pay for their prescriptions was 437.91 Baht and their average total drug cost was 990.94 Baht. In drug cost per day basis, the results showed that the average anti-diabetic drug costs per day between two patient groups were not significantly different (p > 0.05). However, their average total drug costs per day were significantly different (p < 0.05). The average total drug cost per day of the patients who paid out-of-pocket was 26.76 Baht, while it was 17.56 Baht for the patients who did not pay for their prescriptions. Linear regression results showed that the patient’s type of payment significantly influenced both anti-diabetic and total drug cost per prescription and cost per day. CONCLUSIONS: A significant relationship between patient’s payment type and prescription drug costs for diabetic patients was found. The patients who paid out-of-pocket likely obtained more expensive prescription drugs than did the patients who did not pay for their prescriptions.

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**PRESCRIBING TRENDS FOR COMBINATION PRODUCTS IN THE TREATMENT OF TYPE-II DIABETES**

Bilek JC1, Carlson A2, Morris LS1

1University of Minnesota, Minneapolis, MN, USA; 2Data Intelligence, Eden Prairie, MN, USA; 3IMS Health, Plymouth Meeting, PA, USA

**OBJECTIVE:** To examine prescribing trends of combination oral hypoglycemic therapy for persons with Type-II diabetes using prescription claims. **METHODS:** Prescribing trends were identified for patients using combination oral hypoglycemic agents for the treatment of diabetes during a three month period beginning November, 2003–January, 2004. Persons were considered newly treated with type II diabetes if there were no prescription claims for insulin or oral diabetes agents during a three month period prior to the first prescription for a combination product. Trends in patients already receiving oral hypoglycemic agents or insulin were identified if combination therapy was added after minimally three months of therapy or if oral hypoglycemic combination therapy was added to an existing treatment regimen during the three-month observation period. Current recommendations for use of combination therapy were compared to the results of prescribing trends obtained from administrative data. **RESULTS:** On average, approximately 661,811 persons were identified with combination therapy on a monthly basis (211,922 in November, 2003; 227,981 in December, 2003; 221,908 in January, 2004). Of these, on average approximately 130,708 received metformin/rosiglitazone, 491,380 received metformin/glyburide, and 38,011 received metformin/glipizide. Several prescribing trends were observed for these agents. Despite literature to the contrary, the combination metformin/rosiglitazone was prescribed as initial therapy for 19% of patients receiving prescriptions for that product. Combination products were prescribed as initial therapy for 11% to 19% of patients depending on product. Almost 1% of patients received a combination product plus two or more agents on a monthly basis. A small number of patients received two combination products in their daily regimen. **CONCLUSION:** Approximately one-fifth of patients receive initial oral hypoglycemic therapy outside of current prescribing recommendations. The prescribing patterns observed from this data suggest the need for treatment regimen management and for plans to carefully study the economic impact of multiple regimen treatments.