were extrapolated to The Netherlands by direct standardisation.

RESULTS: From 2000 to 2004, the annual prevalence of DM in The Netherlands increased from 454,000 to 641,000 patients. Severe cardiovascular complications attributed to diabetes increased from 18,000 to 39,000 patients. Total cost associated with antidiabetic drug treatment and hospitalizations, attributed to DM, increased from €442,308,000 to €822,333,000. Most of these costs (€535,672,000 in 2004) were due to hospitalizations. Cost of hospitalizations and cardiovascular drugs among control subjects increased from €275,123,000 to €608,392,000. CONCLUSIONS: Drug treatment, hospitalisations and cost attributed to diabetes mellitus have almost doubled between 2000 and 2004, but so did the “background” costs in the general population, perhaps due to preventive efforts.

PDB15

COMPARATIVE COST-UTILITY ANALYSIS OF LONG-ACTING INSULIN ANALOGUE (INSULIN DETEMIR) AND NPH INSULIN FOR THE TREATMENT OF TYPE 1 AND TYPE 2 DIABETES AND THE BUDGET IMPACT ANALYSIS OF INSULIN ANALOGUE REIMBURSEMENT IN POLAND

Walczak J1, Pawlik D1, Jasinska A1, Garbacka M1, Kedzior J1, Fundament T1, Malczak I1, Dardzinski W1, Skrzekowska-Baran I1, Czech M1, Nogas G1

1Arcana Institute, Cracow, Poland, 2Novo Nordisk Pharma Poland, Warsaw, Poland

OBJECTIVES: To compare cost-utility of detemir and NPH insulin in intensive insulin therapy (IIT) of type 1 diabetes patients, cost-utility of detemir and NPH insulin in basal-bolus IIT or added to oral antidiabetes treatment in type 2 diabetes. To estimate the impact of insulin detemir reimbursement on the budget (BIA) of the National Health Fund in Poland.

METHODS: Cost-utility analysis from payers’ (Polish National Health Fund and patient) perspective in lifetime horizon was conducted using CORE Diabetes Model. The effectiveness data were derived from clinical studies. The model default values and experts’ opinion served as data sources for resource use. BIA: Two scenarios were compared: before and after reimbursement of insulin detemir with reimbursement limit equal to the drug price. Population of patients treated with insulin detemir was assumed to consist of type 1 and type 2 patients with documented episodes of severe hypoglycaemia, undergoing IIT (with use of standard basal insulin NPH). RESULTS: CUA: Insulin detemir in type 1 and type 2 diabetes patients is more costly and more effective than NPH insulin in terms of patients’ life expectancy and quality adjusted life years (QALys) gained—cost per QALY gained is: PLN 161,138 (€47,512) in type 1 diabetes treatment; PLN 603,107 (€177,829), assuming use of basal-bolus intensive insulin therapy in type 2 diabetes; PLN 72,583 (€21,401), assuming use of long-acting insulin with oral antidiabetes drugs in type 2 diabetes. A Predicted number of patients would increase by PLN 6,1mln (€1,8mln), i.e. 20% compared to a current situation. CONCLUSIONS: Type 1 and type 2 diabetes treatment with insulin detemir offers an improvement of patients’ quality of life, being more costly than standard intensive insulin therapy with NPH.

PDB16

THE COST-UTILITY AND BUDGET IMPACT ANALYSIS OF SITAGLIPTIN (JANUVIA®) IN TYPE 2 DIABETES IN POLAND

Walczak J1, Malczak I1, Panasiuk A1, Pawlik D1, Lasota K1, Stelmachowski J1, Nogas G1

1Arcana Institute, Cracow, Poland

OBJECTIVES: To estimate the cost-utility of sitagliptin (Januvia®) in the treatment of type 2 diabetes and impact of Januvia® reimbursement on Polish National Health Fund (NFZ) budget.

METHODS: Cost-utility Markov model from both payers’ perspective (NFZ and patient) was constructed with one year time horizon. Target population were patients with insufficient glycemie control with metformin monotherapy. One comparison: sitagliptin/metformin vs metformin/glipizide was performed in CUA. The measure of the effects was QALY. BIA was performed from public payers’ and both payers’ (NFZ and patient) perspective in 3-year time horizon. Two reimbursement levels were considered 30% and 100%. RESULTS: Average costs of the treatment of diabetes were 3,128.37 PLN for SIT/MET and 1,317.76 PLN for GLI/MET. Treatment effects were 0.715 QALY for SIT/MET and 0.687 QALY for GLI/MET. ICER value for SIT/MET vs GLI/MET was 67.02 PLN/QALY. Assuming 100%-reimbursement, annual expenses from National Health Fund budget would raise by 9.1 (year 2008), 15.9 (2009) and 20.5 mln PLN in year 2010. In case of 30%-reimbursement of sitagliptin, incremental expenditures for NFZ would be: 6.25, 10.94 and 14.07 mln PLN in years 2008, 2009 and 2010 respectively. Assuming both payers’ perspective annual expenses from NFZ budget and patient would raise by: 8.3 (year 2008), 14.5 (2009) and 18.6 mln PLN in year 2010. CONCLUSIONS: Results of the analysis indicate that sitagliptin/metformin treatment is more effective and more expensive than strategy with metformin/glipizide. ICER is below the acceptable threshold (83,239 PLN), therefore treatment with SIT can be considered as cost-effective.

PDB17

A COMPARISON OF COSTS AMONG PATIENTS WITH TYPE 2 DIABETES WHO INITIATED THERAPY WITH EXENATIDE OR INSULIN GLARGINE

Misurski DA1, Fabunmi R2, Boye KS1, Lage MJ3

1Eli Lilly and Company, Indianapolis, IN, USA, 2Amylin Pharmaceuticals, San Diego, CA, USA, 3HealthMetrics Outcomes Research, Groton, CT, USA

OBJECTIVES: Compare costs among patients with type 2 diabetes (T2D) treated with exenatide or insulin glargine. These are injectable agents typically used after failure on oral antidiabetic agent(s)

METHODS: Data from September 2004 to September 2007 were obtained from a large retrospective claims database. Intent-to-treat cohorts of insulin-naïve adults diagnosed with T2D who initiated therapy on either exenatide (N = 4090) or insulin glargine (N = 1660). Individuals were not allowed to use the other medication or other insulin in the one-year follow-up period. Annual total medical costs and total diabetes related medical costs were estimated using stepwise multivariate regressions. Major cost components were also examined using either stepwise multivariate regressions or a two-part model that controlled for the probability of using the service. Smearing estimates were used to transform estimated log costs into costs. The analyses controlled for the potential impact of patient demographics, general health, prior resource use, comorbidities, and timing of treatment initiation.

RESULTS: Initiation with exenatide compared to insulin glargine, was associated with significantly lower total direct medical costs ($19,293 vs $23,782, p = 0.001) and total diabetes-related medical costs ($7,833 vs $8,536, p < 0.0001). Initiation of therapy with exenatide compared to insulin glargine was also
associated with significantly lower inpatient ($4,212 vs $7,532, p < 0.0001), outpatient ($9,501 vs $12,885, p < 0.0001), and emergency room costs ($82 vs $131, p < 0.0001) and significantly higher drug costs ($6,885 vs $5,936, p < 0.0001). Similarly, the use of exenatide compared to insulin glargine was also associated with significantly lower diabetes-related inpatient ($2172 vs $3538, p < 0.0001) and outpatient costs ($2739 vs $3249, p < 0.0001) and significantly higher diabetes-related drug costs ($3160 vs $2424, p < 0.0001). CONCLUSIONS: Use of exenatide, compared to insulin glargine, was found to be associated with significantly lower annual total direct medical costs and total diabetes related medical costs even though diabetes related and total drug costs were higher.

PDB18
A COMPARISON OF COSTS AMONG PATIENTS WITH TYPE 2 DIABETES WHO INITIATED THERAPY WITH EXENATIDE OR SITAGLIPTIN
Lage MJ1, Misurski DA2, Fabunmi R3, Boye KS2
1HealthMetrics Outcomes Research, Groton, CT, USA, 2Eli Lilly and Company Indianapolis, IN, USA, 3Amylin Pharmaceuticals, San Diego, CA, USA

OBJECTIVES: Compare costs among patients with type 2 diabetes (T2D) treated with either exenatide or sitagliptin, novel incretin therapies with differing clinical effectiveness.

METHODS: Data from September 2004 to September 2007 were obtained from a large, retrospective, claims database. Data from intent-to-treat cohorts of adults with T2D who initiated therapy on either exenatide (N = 1614) or sitagliptin (N = 2482) and who did not use the other medication in the six-month follow-up period were examined. Total medical costs and total diabetes-related medical costs were estimated using stepwise multivariate regressions. Major cost components were also examined using either stepwise multivariate regressions or a two-part model that controlled for the probability of using the service. Smearing estimates were used to transform estimated log costs into costs. The analyses controls for the potential impact of patient demographics, general health, prior resource use, comorbidities, and timing of treatment initiation.

RESULTS: Initiation on therapy with exenatide, compared to sitagliptin, was associated with significantly lower total direct medical costs ($8736 vs $9995, p < 0.0001) and total diabetes-related medical costs ($3591 vs $3841, p < 0.0001). Initiation of therapy with exenatide compared to sitagliptin was also associated with significantly lower inpatient ($3624 vs $7,532, p < 0.0001), outpatient ($3,624 vs $5,947, p < 0.0001), and drug ($3467 vs $3611, p < 0.0001) and emergency room costs ($16 vs $44, p < 0.0001). Similarly, the use of exenatide compared to sitagliptin was associated with significantly lower diabetes-related inpatient ($2,172 vs $3,538, p < 0.0001) and drug costs ($1,677 vs $1,743, p < 0.0001). CONCLUSIONS: Use of exenatide compared to sitagliptin over six months is associated with significantly lower inpatient ($4,212 vs $7,532, p < 0.0001), outpatient ($9,501 vs $12,885, p < 0.0001), and emergency room costs ($82 vs $131, p < 0.0001) and significantly higher drug costs ($6,885 vs $5,936, p < 0.0001). Similarly, the use of exenatide compared to insulin glargine was also associated with significantly lower diabetes-related inpatient ($2172 vs $3538, p < 0.0001) and outpatient costs ($2739 vs $3249, p < 0.0001) and significantly higher diabetes-related drug costs ($3160 vs $2424, p < 0.0001). CONCLUSIONS: Use of exenatide, compared to insulin glargine, was found to be associated with significantly lower annual total direct medical costs and total diabetes related medical costs even though diabetes related and total drug costs were higher.

PDB19
ESTIMATING THE COST EFFECTIVENESS IN THE UK OF VILDAGLIPTIN COMPARED TO PIOGLITAZONE AS ADD-ON THERAPY TO METFORMIN USING THE SHEFFIELD TYPE 2 DIABETES MODEL
Brennan A, Gillett M, Duenas A
University of Sheffield, Sheffield, UK

OBJECTIVES: Vildagliptin is an alternative option to glitazones when treatment intensification is required due to loss of glycemic control. Our analysis compares the clinical and cost-utility effects of these alternative treatments.

METHODS: The analysis uses the Novartis 24-week 2354 study results comparing vildagliptin 50mg BID to pioglitazone 30mg qd. The Sheffield Type 2 Diabetes Model, a patient-level disease management model, simulates use of therapies, clinical events, treatment of complications and mortality. Costs, including the £1.13 vildagliptin daily price and £1.20 for pioglitazone, and quality-of-life (QoL) effects, including those related to complications and weight effect of therapies, were aggregated to obtain the incremental cost per QALY. Uncertainty around key parameters, such as weight effects and long-term HbA1c trends, was explored using probabilistic sensitivity analysis and scenarios.

RESULTS: Assuming equal long-term HbA1c trends, the point estimate suggests that vildagliptin is cost effective compared to pioglitazone with a cost saving of £88 and reduction in QALYs of 0.0006. The marginal net benefit of vildagliptin compared to pioglitazone is £77 (95% CI. –23 to 177) with a 62% likelihood that vildagliptin is cost effective at a £100,000 cost/QALY threshold. The main driver is the cheaper cost of vildagliptin. There is a small QALY loss due to fewer CHD events with pioglitazone arising from its superior lipid effects, although this is mitigated by the QALY gain due to the weight neutrality of vildagliptin. The long-term HbA1c trends are highly important but uncertain assumptions, and conclusions about the cost effectiveness could change if evidence for different trends emerged.

CONCLUSIONS: The expected differences in lifetime costs and QALYs between vildagliptin and pioglitazone are small, with considerable uncertainty around key parameters. Results suggest a 62% likelihood that vildagliptin is cost effective compared to pioglitazone at a £20,000 cost/QALY threshold assuming similar long-term HbA1c trends.

PDB20
LONG-TERM COST-EFFECTIVENESS OF INSULIN DETEMIR COMPARED TO NEUTRAL PROTAMINE HAGEDORN INSULIN IN PATIENTS WITH TYPE 1 DIABETES USING A BASAL–BOLUS REGIMEN IN BELGIUM, FRANCE, GERMANY, ITALY AND SPAIN
Gschwend MH1, Aagren M2, Valentine WJ2
1IMS Health, Allschwil, Switzerland, 2Novo Nordisk A/S, Virum, Denmark

OBJECTIVES: The aim of this analysis was to evaluate the long-term clinical and economic outcomes associated with insulin detemir and Neutral Protamine Hagedorn (NPH) insulin in combination with mealtime insulin aspart in patients with type 1 diabetes in the Belgian, French, German, Italian and Spanish settings.

METHODS: A published and validated computer simulation model of diabetes (CORE Diabetes Model) was used to make long-term projections of life-expectancy, quality-adjusted life expectancy and direct medical costs. The analysis was based on patient characteristics and treatment effects from a 2-year, multi-national, open-label, randomized, controlled trial. In the trial, insulin detemir was associated with significant improvements in glycemic control after 24 months (HbA1c 7.36% versus 7.58%, mean difference –0.22%, P = 0.022) and major hypoglycemic events (69% risk reduction, P = 0.001) versus NPH. Patients treated with detemir gained less weight (1.7 versus 2.7 kg, P = 0.024). Events were projected for a time horizon of 50 years.

RESULTS: Basal-bolus therapy with insulin detemir was projected to improve quality-adjusted life expectancy by 0.45 years (7.04 versus 6.59 years) versus NPH in the German setting. Similar improvements were observed in the other countries (Belgium +0.52, France +0.55, Italy +0.58 and Spain +0.40 years). Insulin detemir was associated with cost savings in