patients with HDL-c <1 mmol/L, treatment with statin plus add-on Niaspan® was compared to statin monotherapy. Niaspan® treatment effects were taken from several clinical trials as summarized in the European SPC. The second model (Markov) simulated the development of coronary heart disease events based on the Framingham risk formulae. Direct medical costs were accounted from a third-party payer perspective in the UK and expressed in pounds sterling (£). Annual discount rates of 3.5% were applied to clinical and cost outcomes. RESULTS: Niaspan® was associated with improvements in mean discounted life expectancy in diabetic (0.32 years) and non-diabetic cohorts (0.29 years) compared to statin monotherapy. Similarly, improvements in quality-adjusted life expectancy of (diabetic) 0.26 and (non-diabetic) 0.23 quality-adjusted life years (QALYs) were projected. Niaspan® was associated with increases in mean lifetime costs of £4492 (diabetic) and £4891 (non-diabetic) versus statin alone. This led to incremental cost-effectiveness ratios of £17,296 per QALY gained in the diabetic cohort and £21,150 in the non-diabetic cohort. CONCLUSIONS: Addition of Niaspan® to statin treatment was cost-effective by generally accepted standards compared to statin monotherapy in patients with persistently low HDL-c in the UK. In patients with Type-2 diabetes and an associated high risk of CHD events, add-on therapy with Niaspan® represented better value for money than in non-diabetic patients.

**ECONOMIC EVALUATION OF SWITCHING TYPE-1 DIABETES PATIENTS FROM LONG-ACTING INSULIN GLARGINE IN A BASAL/BOLUS REGIME TO LONG-ACTING INSULIN DETEMIR IN AN AUSTRIAN SETTING**

**OBJECTIVES:** To project long-term clinical and cost outcomes associated with long-acting insulin analog treatment in patients with type-1 diabetes in an Austrian setting. METHODS: We used a published, validated and peer-reviewed computer simulation model of diabetes to project short-term clinical findings to evaluate long-term outcomes including quality-adjusted life expectancy, complication rates and direct medical costs. Clinical data have been derived from the PREDICTIVE study, an ongoing global post-marketing safety study, for a sub-group of patients with type-1 diabetes receiving long-acting insulin glargine (IGlar) in a basal/bolus treatment regimen at baseline and switched to long-acting insulin detemir (IDet). After 12 weeks of follow up, IDet-based basal/bolus treatment was associated with improvements in HbA1c (0.25%-points lower), reduced risk of hypoglycemic events (by 55%), and decreased body weight (0.27kg) compared to IGlар-based treatment. Probabilities of complications and HbA1c-dependent adjustments were derived from the DCCT, Framingham, and WESDR studies (amongst others). Costs of treating complications were retrieved from published sources. Total direct costs (complications + treatment costs) were projected over patient lifetimes. Costs and outcomes were discounted at 3.5% per annum. RESULTS: Improved glycemic control, decreased hypoglycemic events and BMI with IDet-based therapy were projected to lead to improvements in quality-adjusted life expectancy and fewer diabetes-related complications than IGlар-based regimens. Incremental cost-effectiveness analyses indicated that, over patient lifetimes, IDet-based combinations would represent good value for money versus IGlар-based therapy in the Austrian setting.

**BIPHASIC INSULIN ASPART 30 VERSUS ORAL HYPOGLYCEMIC AGENTS IN THE TREATMENT OF TYPE-2 DIABETES: LONG-TERM PROJECTION OF CLINICAL AND COST OUTCOMES IN SWEDEN**

**OBJECTIVES:** To project long-term clinical and cost outcomes associated with biphasic insulin aspart 30 (BiAsp 30) and oral hypoglycemic agents (OHAs) in a Swedish setting based on the findings of a randomized clinical trial. METHODS: A published, validated and peer-reviewed model of diabetes was used to simulate the progression of diabetes-related complications based on clinical trial data which showed that switching to BiAsp 30 significantly reduced HbA1c compared to continuation of OHAs in insulin-naïve patients with Type-2 diabetes over 16 weeks (difference in HbA1c reduction 0.648%; p < 0.001). Direct medical costs were accounted from a third party payer perspective in Sweden and expressed in 2004 Swedish Kroner (SEK). Costs and clinical benefits were discounted at 3% annually and sensitivity analyses were performed on treatment effect, time horizon and discount rates. RESULTS: BiAsp 30 was projected to extend life expectancy (mean [standard deviation]) by 0.47 [0.22] compared to OHAs (11.38 vs. 10.90 years). Quality-adjusted life expectancy was improved with BiAsp 30 by 0.42 [0.15] quality-adjusted life years (QALYs) versus OHAs (7.94 vs. 7.52 QALYs). BiAsp 30 was associated with a lower cumulative incidence of diabetes-related complications, particularly retinopathy and nephropathy. Mean direct lifetime costs were higher in the BiAsp 30 group (SEK 286,467 [11,745]) than in patients receiving OHAs (SEK 272,752 [12,885]), a difference of SEK 13,716 [17,030], leading to an incremental cost-effectiveness ratio of SEK 32,736 per QALY gained. Sensitivity analysis showed that these findings were robust under variation in a range of assumptions. CONCLUSIONS: Switching to BiAsp 30 was projected to reduce the incidence of diabetes-related complications, and improve life expectancy and quality-adjusted life expectancy, compared to continuation of OHAs in Type-2 diabetes patients. Switching to BiAsp 30 was projected to represent good value for money by internationally accepted standards in the Swedish setting.

**COST-EFFECTIVENESS ANALYSIS OF BASAL/BOLUS THERAPY IN TYPE-1 DIABETES USING INSULIN DETEMIR + INSULIN ASPART OR HUMAN SOLUBLE INSULIN-BASED BASAL/BOLUS REGIMENS IN GERMANY**

**OBJECTIVES:** In patients with type-1 diabetes, poor glycemic control is associated with an increased risk of complications. A recent clinical study provided evidence that basal/bolus treatment with insulin detemir + insulin aspart (IDet/lAsp) improved HbA1c (0.22%-points lower after 18 weeks), reduced the risk of hypoglycemic events (by 21%), and decreased body mass index.
(BMI) (~0.3 kg/m²) in comparison to neutral protamine Hagedorn insulin + human soluble insulin (NPH/HSI). The aim of this study was to project the long-term clinical and cost outcomes associated with IDet/IAsp versus NPH/HSI basal/bolus therapy in the German setting based on these findings. METHODS: A published, validated and peer-reviewed model that combines Markov sub-models and Monte Carlo simulation was used to simulate the progression of diabetes and its complications (cardiovascular disease, neuropathy, renal and eye disease). Transition probabilities and HbA1c-dependent adjustments were derived from published sources. Baseline cohort characteristics and treatment effect data were based on the clinical study. Direct costs were retrieved from published sources and projected over patient lifetimes from a German National Health care perspective. Costs and clinical benefits were discounted at 3.5% annually. RESULTS: IDet/IAsp treatment was associated with fewer diabetes-related complications, improved life expectancy (0.23 life years gained) and quality-adjusted life expectancy (0.21 QALYs gained) compared to NPH/HSI. Mean total lifetime costs were €13,761 per patient higher with IDet/IAsp, leading to incremental cost-effectiveness ratios (ICERs) of €13,761 per life year and €15,071 per QALY gained. CONCLUSIONS: Short-term clinical benefits in glycemic control, hypoglycemic event rates and BMI associated with IDet/IAsp basal/bolus therapy were projected to lead to fewer complications, improved life expectancy and quality-adjusted life expectancy compared to NPH/HSI. This resulted in ICERs for IDet/IAsp versus NPH/HSI in the range considered to represent good value for money.

ECONOMIC EVALUATION OF DETEMIR-BASED BASAL/BOLUS THERAPY VERSUS NPH-BASED BASAL/BOLUS THERAPY FOR TYPE-1 DIABETES IN GERMANY

Palmer AJ, Valentine WJ, Wittrup-Jensen KU, Roze S
1CORE—Center for Outcomes Research, Binningen, Basel, Switzerland; 2Novo Nordisk Pharma, Mainz, Germany

OBJECTIVES: In a recent randomized, controlled clinical study in 447 patients with type-1 diabetes, use of insulin detemir (IDet) versus neutral protamine hagedorn (NPH) insulin in a basal (twice daily)/bolus regimen with insulin aspart (IAsp) as bolus insulin, demonstrated that IDet/IAsp was associated with a risk reduction of 22% for hypoglycemic events (p < 0.029), a reduction of 0.2 kg in body weight (p < 0.001) and decreased systolic blood pressure (SBP) (3 mmHg, p < 0.001) versus NPH/IAsp over 6 months of treatment. No significant difference in HbA1c was noted. The aim of this analysis was to assess the impact of these changes over long-term treatment with IDet/IAsp versus NPH/IAsp. METHODS: A peer-reviewed, validated computer simulation model was used to project these short-term findings to evaluate long-term clinical and cost outcomes. Transition probabilities and risk adjustments were derived from published studies. Baseline cohort characteristics were taken from the clinical trial. Total direct costs (complications + treatment costs) were derived from published sources and projected over patients’ lifetimes from a German National Health care perspective. Costs and clinical benefits were discounted at 3.5% annually. RESULTS: Decreased incidence of hypoglycemic events, improved BMI and SBP associated with IDet/IAsp treatment compared to NPH/IAsp. This resulted in ICERs for IDet/IAsp versus NPH/IAsp treatment arm than in the NPH/IAsp group, leading to incremental cost-effectiveness ratios of €8027 per LYG and €5473 per QALY gained. CONCLUSIONS: Short-term clinical improvements associated with IDet/IAsp were projected to lead to a lower incidence of complications, improved life expectancy and quality-adjusted life expectancy compared to NPH/IAsp. Reductions in the cost of complications partially offset the costs of IDet/IAsp treatment, leading to incremental cost-effectiveness ratios within the range considered to represent good value for money.

ASSessment of the Long-Term Cost–Effectiveness of Insulin Aspart + Metformin Versus Human Insulin + Metformin Regimens in Type-2 Diabetes in Germany Based on the Clinical Findings of the PHAZIT Study

Roze S1, Wittrup-Jensen KU, Hausser C, Valentine WJ, Palmer AJ
1CORE—Center for Outcomes Research, Binningen, Basel, Switzerland; 2Novo Nordisk Pharma, Mainz, Germany

OBJECTIVES: To evaluate the long-term clinical and cost outcomes associated with insulin aspart + metformin (IAsp/MET) versus human insulin + metformin (HI/MET) in patients with Type-2 diabetes in a German setting based on the findings of the PHAZIT clinical trial. METHODS: Long-term outcomes were...