COST-EFFECTIVENESS OF ACARBOSE IN ADDITION TO EXISTING TREATMENTS IN TYPE-2 DIABETES IN GERMANY
Roze S1, Valentine WJ1, Evers T2, Palmer AJ1
1CORE—Center for Outcomes Research, Binningen, Switzerland; 2Bayer Health care AG, Wuppertal, Germany

OBJECTIVES: Based on findings of a recent meta-analysis, evaluate long-term cost-effectiveness of acarbose given in addition to existing treatments in type-2 diabetes patients in a German setting. METHODS: The CORE Diabetes Model (peer-reviewed, published, validated computer simulation model) was used to project long-term clinical and cost outcomes in type-2 diabetes patients receiving acarbose or placebo in addition to their existing treatment. Transition probabilities and risk adjustments came from published sources. Treatment effects and baseline cohort characteristics were based on recently published retrospective meta-analysis of placebo-controlled, double-blind, long-term studies in type-2 diabetes, showing that acarbose treatment was associated with improvements in HbA1c, systolic blood pressure, lipid levels and BMI, and significant reduction in the risk of cardiovascular events. Direct costs were retrieved from published sources and projected over patient lifetimes from a third party health care payer perspective in Germany. Costs and clinical benefits were discounted at five percent per annum. Sensitivity analyses were performed. RESULTS: Acarbose treatment was associated with improvements in mean discounted life expectancy of 0.21 years (7.78 ± 0.13 versus 7.57 ± 0.13 years [mean ± standard deviation]) and quality-adjusted life expectancy of 0.19 QALYs (5.36 ± 0.09 versus 5.17 ± 0.09 QALYs). Lifetime direct costs were on average €134 per patient more expensive with acarbose than with placebo (€327,778 ± 1194 versus €32,643 ± 1285). Reduced complication costs partially offset greater treatment costs in the acarbose arm, leading to incremental cost-effectiveness ratios of €633 per life year gained and €692 per quality-adjusted life year gained. Sensitivity analysis showed that these results were robust under variation in a range of assumptions. CONCLUSIONS: Addition of acarbose to existing treatment was projected to lead to improvements in life expectancy and quality-adjusted life expectancy, and provide excellent value for money over patient lifetimes by current standards in the German setting.

HEALTH ECONOMIC EVALUATION OF INSULIN GLARGINE FOR THE TREATMENT OF TYPE-1 AND TYPE-2 DIABETES
Thompson M1, Sauriol L2, Grima D3
1Innovus Research Inc, Burlington, ON, Canada; 2Sanofi-aventis, Laval, QC, Canada; 3Cornerstone Research Group Inc, Oakville, ON, Canada

OBJECTIVES: Managing diabetes within accepted limits (A1c ≤ 7%) is often complicated by the occurrence of hypoglycemia. To reduce the risk of hypoglycemia, patients and clinicians sometimes settle for sub-optimal glucose control. However, sub-optimal glycemic control increases the risk of diabetes-related complications, having important economic consequences to the health care system. Basal insulin glargine, has a distinctive A1c hypoglycemia relationship compared to NPH insulin, with reduced chance of hypoglycemia at lower A1c values. The objective is to assess the value of insulin glargine, compared to NPH insulin, in insulin treated people with Type-2 diabetes who failed to achieve an A1c ≤ 7%. METHODS: A 36-year time horizon state transition model simulating the natural history of diabetes and projecting clinical and economic benefits of insulin glargine compared to NPH insulin, was used. The study used Canadian costs and utilities from previous publications. UKPDS and DCCT provided the base for complication risks. The Ministry of Health perspective was taken. RESULTS: Considering the 36-year (lifetime) direct drug and complications costs, NPH was found to be less expensive than insulin glargine ($1559 in type-1 diabetes and $2248 in type-2 diabetes). However, since the treatment with insulin glargine substantially reduced risk of long-term complications, it produces greater life years (LY) (0.08 LY gained and 0.25 LY gained in type-1 and type-2 diabetes, respectively) and quality-adjusted life years (QALYs) (0.07 QALY gained and 0.23 QALY gained in type-1 and type-2 diabetes, respectively). When considering glargine over NPH, the incremental cost per LY gained and cost per QALY gained were $20,317 and $23,717 for type-1 diabetes, and $9131 and $9804 for type-2 diabetes. CONCLUSIONS: For type-2 patients, insulin glargine therapy results in substantial clinical benefits and represents an economical alternative to NPH insulin with competitive cost-effectiveness ratios.