from major epidemiological studies. Costs of complications were
derived from published sources. From the government payer per-
spective, direct costs of diabetes complications and of SMBG
were projected over patient lifetimes. Outcomes were discounted
at 3% annually. RESULTS: Depending on type of treatment
diet/exercise, oral medications, or insulin), greater glycemic
glucose control with SMBG improved (discounted) QALE by 0.10 to
0.15 QALYs and increased total costs by €323 to €703 per
patient. The resulting incremental cost-effectiveness ratios ranged from €3220 to €7276 per QALY gained, and were well
within current willingness-to-pay limits. SMBG was most cost-
effective in the sub-group of patients being treated with oral
antidiabetic medication. CONCLUSIONS: Within the three
treatment regimens examined, the addition of SMBG was asso-
ciated with increased glycemic control and with improved clini-
cal and economic long-term outcomes. The incremental
cost-effectiveness ratios were of magnitudes typically considered
to indicate good value for money within the French health care
setting. Additional comparative studies are needed to further
assess Utilities and other standard outcomes associated with
SMBG in patients with type 2 diabetes.

SELF MONITORING OF BLOOD GLUCOSE IN PATIENTS WITH
TYPE 2 DIABETES: COST UTILITY ANALYSIS IN A GERMAN
GOVERNMENT PAYER SETTING
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OBJECTIVES: Previous studies have shown that for patients
with type 2 diabetes, self monitoring of blood glucose (SMBG)
can improve glycemic control (with HbA1c improvements of
0.3–0.6%, depending on treatment received). This in turn, can
reduce risks of disease complications. Because monitoring sup-
plies can have high acquisition costs, country-specific evaluations of
SMBG cost-effectiveness are needed. The aim of this analysis
was to estimate, within Germany, the cost-effectiveness of using
SMBG. METHODS: A validated, published model for type 2
diabetes (The CORE Diabetes Model) was used to project
improvements in quality-adjusted life expectancy (QALE), long-
term costs and cost-effectiveness of SMBG. A series of Markov
models simulated the progression of diabetes-related complica-
tions (cardiovascular, neuropathy, renal and eye disease). Tran-
sition probabilities and HbA1c-dependent adjustments came
from major epidemiological studies. Costs of complications were
derived from published sources. From the Government payer per-
spective, direct costs of diabetes complications and of SMBG
were projected over patient lifetimes. Outcomes were discounted
at 3% annually. RESULTS: Depending on type of treatment
diet/exercise, oral medications, or insulin), greater glycemic
control with SMBG improved (discounted) QALE by 0.05 to
0.12 QALYs and increased total costs by €340 to €1227 per
patient. The resulting incremental cost-effectiveness ratios ranged from €7358 to €10,447 per QALY gained, and were well
within current willingness-to-pay limits. SMBG was most cost-
effective in the sub-group of patients being treated through diet
and exercise. CONCLUSIONS: Within the three treatment reg-
imens examined, the addition of SMBG was associated with
increased glycemic control and with improved clinical and eco-
nomic long-term outcomes. The incremental cost-effectiveness
ratios were of magnitudes typically considered to indicate good
value for money within the German health service setting. Addi-
tional comparative studies are needed to further assess Utilities and
other standard outcomes associated with SMBG in patients with
type 2 diabetes.

COST-EFFECTIVENESS OF ACARBOSE IN PATIENTS WITH
TYPE 2 DIABETES IN THREE COUNTRIES
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OBJECTIVES: To project the long-term clinical and cost out-
comes of the addition of acarbose to existing treatments for type
2 diabetes patients in German, Spanish and Taiwanese settings.
METHODS: Patient characteristics and acarbose treatment
effects were based on clinical data from the MERIA meta-analy-
sis. A published computer simulation model of diabetes was used
to project long-term clinical and cost outcomes in patients receiv-
ing acarbose or placebo in addition to their existing treatment.
It was used to project the life expectancy (LE), quality-adjusted
life expectancy (QALE), cumulative incidence of diabetic com-
plications and medical costs over the lifetime of the patients.
Costs were calculated from a third-party health care payer per-
spective with unit costs derived from published sources (2004
Euro values). Costs and clinical benefits were discounted at 5%
(Germany) and 3% (Spain, Taiwan) annually. RESULTS: Long-
term projections indicated acarbose was associated with notable
improvements in LE and QALE compared to placebo. For
Germany, Spain and Taiwan incremental quality-adjusted life
expectancy for acarbose compared to placebo were 0.21, 0.23 and
0.27 QALYs, respectively. Incremental cost (direct medical
costs over patients' lifetimes) values of €134, €468 and €331
were estimated for the same three country settings. These values
produced incremental cost-effectiveness ratios (ICERs) of €692
(Germany), €2199 (Spain), and €1291 (Taiwan) per QALY gained for
acarbose versus placebo. The additional pharmacy costs associated with acarbose treatment were largely offset by
reduced complication costs over patients' lifetimes. Acceptabil-
ity curve analysis showed that with a willingness-to-pay of
€20,000 per QALY gained, the probability of being cost-
effective was 95% in Germany, 93.5% in Spain and 96% in
Taiwan for acarbose versus placebo. CONCLUSIONS: Acarbose
was associated with reduced incidence of diabetes-related com-
plications and improvements in LE and QALE and provides
excellent value for money versus placebo over patients' lifetimes in
the German, Spanish and Taiwanese settings.

COMPARATIVE OUTCOMES-BASED HEALTH ECONOMIC
EVALUATION OF TYPE 2 DIABETES PATIENTS ON BASAL
INSULIN ANALOGS
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OBJECTIVES: Type 2 diabetes poses significant clinical and eco-
nomic burden to health care systems. It is therefore important to
project economic and quality-adjusted effects of real-life clinical
outcome improvements with different treatment options. This
study aimed to evaluate such impacts when transferring type 2
patients on insulin glargine to insulin detemir. METHODS: Base-
line and 3-month treatment effect data were collected from a
subgroup of 260 patients with type 2 diabetes replacing insulin
glargin with insulin detemir from a prospective, internationally-
based observational trial. Baseline demographic data were: male
46.9%; mean age 63.7 years; duration of diabetes 9.9 years;
HbA1C 7.83%; BMI 30.2 kg/m2. A validated simulation model of
diabetes calculated gains in life years (LYG), quality-adjusted
ECONOMIC EVALUATION OF INITIATING INSULIN DETEMIR AMONG TYPE 2 DIABETES PATIENTS RECEIVING ORAL MEDICATION

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OBJECTIVES: Many patients with type 2 diabetes are not achieving recommended HbA1c targets. Barriers preventing the initiation of more efficacious therapies include economic restrictions. The present analysis aimed to evaluate potential clinical and economic outcomes of initiating insulin detemir among type 2 diabetes patients previously on oral medication alone.

METHODS: Data were analyzed from 1321 patients who participated in a 12-week prospective observational trial (50.6% male; mean age 62.2 years; diabetes duration 6.5 years; HbA1c 8.49%; BMI 29.5 kg/m2). A published and validated simulation model of diabetes projected total treatment costs (annual drug plus complications), life years gained (LYG), quality-adjusted life expectancy (QALE), and complication incidences for patients commencing detemir versus those modelled to remain insulin naive (10 year horizon). The model structure combines 15 interdependent Markov sub-models, simulating the progression of diabetes-related complications and utilizing second order Monte Carlo simulation to account statistical uncertainty at the patient and parameter levels. Outcomes were discounted at 3% per annum (US Medicare perspective). Sensitivity analyses were performed. RESULTS: Initiation of detemir generated a 1.29% mean reduction in HbA1c over 3 months, with improved fasting blood glucose (FBG; total (SD): −58 mg/dL (−8.2 mg/dL)), and no significant increase in the occurrence of hypoglycaemia. At follow-up, 16% of patients discontinued or reduced oral medications. Pharmacoeconomic modelling demonstrated detemir treatment to improve LYG (0.156 years) and QALE (0.173 years). Reduced major complication incidences were also estimated, including vascular, ocular, and renal events. An incremental cost-effectiveness ratio (ICER) of $657 per QALY gained was generated. An acceptability curve (willingness-to-pay of $50,000/QALY) revealed detemir to have a 95.5% chance of being cost-effective. CONCLUSION: Considerable short-term clinical benefits were observed among insulin-naive type 2 patients initiating detemir. Long-term treatment with detemir was predicted to increase quality-adjusted outcomes and reduce diabetic complications in a cost-effective manner.

EVALUATING THE LONG-TERM HEALTH OUTCOMES AND ECONOMICS OF INITIATING BIPHASIC ANALOG INSULIN COMPARED TO OPTIMIZED ORAL THERAPY ALONE

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OBJECTIVES: The US NHANES study reveals that most type 2 diabetes patients are not achieving endorsed HbA1c goals. During disease progression, clinicians treating insulin-naive subjects may optimize continued oral therapy, or prescribe exogenous insulin to induce tighter glycaemic control. The present analysis aimed to estimate long-term clinical and economic out-