Markov/Monte Carlo simulation techniques to describe the long-term incidence and progression of diabetes-related complications. It was used to simulate disease progression in a cohort of patients with baseline characteristics (mean age 18.6 years, duration of diabetes 12 years, mean HbA1c 7.5%) and clinical outcomes (severe hypoglycaemic event rates, Quality of Life, HbA1c) taken from a recent randomized controlled trial (Kar et al, 2013). The model was validated and sensitivity analysis was conducted. The main scenario considered in this cost-effectiveness analysis was the comparison of sensor-augmented insulin pump (SAP) with low glucose susceoturz (LSG) versus insulin pump alone (CSII). The target population was type 1 diabetic patients with the analysis based on a deterministic micro-simulation of 1,000 patients, using a 5 year time horizon. Direct costs were calculated from a third-party payer perspective. Discount rates of 3% per annum were applied to both costs and clinical outcomes. RESULTS: The cost-effectiveness ratio (ICER) for SAP vs LSG (vs CSII) was €17,893 per Quality-Adjusted Life-Year gained over a 5 year time horizon. Results were similar across a 1 to 10 year horizon. Sensitivity analysis highlighted a large uncertainty around the robustness of the results. CONCLUSIONS: Using a payer's perspective, our analysis showed that SAP (w LSG) is cost-effective over a short term (5 year) time horizon in hypo-prone Type 1 Diabetes patients in Slovakia (using a WTP threshold of 1x [€18,000] or 3x [€54,000] Slovakia GDP).

**FD88**

**THE COST-EFFECTIVENESS EVALUATION OF CANAGLIFLOZIN IN COMBINATION WITH METFORMIN IN THE TREATMENT OF TYPE 2 DIABETES MELLITUS IN POLAND**

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OBJECTIVES: To evaluate the cost-effectiveness of canagliflozin, an active inhibi-
tor of sodium glucose co-transporter – 2 (SGLT2) in dual therapy as add-on to metformin compared to sitagliptin and glimepiride. Canagliflozin in clinical trial results showed effective glucose reduction, along with other benefits in diabetes treatment including weight loss and SBF reduction. Cost effectiveness analyses were performed in the Polish setting in the public payer according to guidelines of Polish HTA Agency (PolAHTA).

METHODS: The IMS CORE Diabetes Model was used to evaluate the cost-effectiveness of canagliflozin versus the other two comparators. We compared the cost-effectiveness of the 2 treatment options over a time horizon of 26 weeks. Costs were applied in Polish zloty and an annual discount rate of 5% and 3.5% were applied on costs and effects respectively. RESULTS: In dual therapy versus as add-on to metformin, canagliflozin 100 mg dominates sitagliptin with average cost savings of 1,912 PLN and an average QALY gain of 0.05 (N=52). Canagliflozin 300 mg is dominant in comparison to glimepiride, with average cost savings of 1,411 PLN and an average QALY gain of 0.04. Overall, the models suggest that canagliflozin is a cost effective option in comparison with glimepiride with ICER of 28,454 zl and 73,102 zl, QALY gain 0.112 QALY and 0.140 QALY for canagliflozin 100 mg and 300 mg respectively. All results are below defined in Polish reimbursement act cost-effectiveness threshold. CONCLUSIONS: These results suggest that add-on canagliflozin versus sitagliptin or glimepiride in patients inadequately controlled with metformin would be a more efficient use of health care resources in the Polish setting.

**FD89**

**COST-EFFECTIVENESS OF INTERVENTIONS AIMED AT DECREASING THE NUMBER OF AMPUTATIONS IN PATIENTS WITH TYPE 2 DIABETES MELLITUS IN POLAND**

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OBJECTIVES: To evaluate the cost-effectiveness of interventions aimed at decreasing the number of amputations among patients with diabetic foot ulcers (DFU) in Russia. METHODS: We have modeled the changes in the annual outcomes (minor and major amputations) and costs (services provided in outpatient clinics and hospitals, medications, orthopedic shoes and prosthetic devices and services provided in case of amputations) from the perspective of public health and social care. Two intervention groups were assessed: preventive services for patients with the very high risk of DFU (additional outpatient visits for foot care and orthopedic shoes) and provision of care for DFU patients at hospital by multidisciplinary foot care team (MDT). The current number of amputations and costs among DFU patients in Russia was assessed on the basis of published Russian data and experts’ survey. The expected effectiveness of interventions was derived from the international publications. Costs were estimated on the basis of reimbursement rates in public medical insurance and published local costing. RESULTS: There are 1000 DFU patients at the current rate of hospitalizations will require additional annual spending of €532,520, and the expected annual number of major amputations will decrease by 41. The ICER for this intervention is €10,216, per prevented amputation, which is almost 2 times higher than the costs associated with major amputation at the current moment. For the preventive services, if all patients are compliant, additional costs per prevented amputation are slightly lower - €10,216, but they will below the cost of major amputation. CONCLUSIONS: Both interventions require considerable additional budget spending. Preventive measures, if all the patients follow the recommendations, are more cost effective than introduction of hospital MDT.

**FD185**

**THE COST-EFFECTIVENESS OF CANAGLIFLOZIN COMPARED WITH LIRAGLITIDE IN PATIENTS WITH TYPE 2 DIABETES MELLITUS IN RUSSIA**

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OBJECTIVES: To evaluate the cost-effectiveness of canagliflozin, an active inhibi-
tor of sodium glucose co-transporter – 2 (SGLT2) in dual therapy as add-on to metformin compared to sitagliptin and glimepiride. Canagliflozin in clinical trial results showed effective glucose reduction, along with other benefits in diabetes treatment including weight loss and SBF reduction. Cost effectiveness analyses were performed in the Polish setting in the public payer according to guidelines of Polish HTA Agency (PolAHTA).

METHODS: The IMS CORE Diabetes Model was used to evaluate the cost-effectiveness of canagliflozin versus the other two comparators. We compared the cost-effectiveness of the 2 treatment options over a time horizon of 26 weeks. Costs and effects were estimated on the basis on reimbursement rates in public medical insurance and guidelines of Polish HTA Agency (PolAHTA).

RESULTS: The analyses found that treatment of T2DM with canagliflozin and glimepiride, each in combination with metformin and SU. Since direct trial data were not available, we also used indirect data on the effect of liraglutide 1.2mg in combination with metformin and SU in France. The IMS CORE Diabetes Model was used to project clinical and economic outcomes for patients with T2DM treated with canagliflozin or lira-
glutide, each in combination with metformin and SU. Since direct trial data were not available, we also used indirect data on the effect of liraglutide 1.2mg in combination with metformin and SU in France. The analyses found that treatment of T2DM with canagliflozin and glimepiride, each in combination with metformin and SU were derived from a network meta-analysis (NMA) of treatment effects at 26 weeks. This study is limited by the absence of direct trial data. The current number of amputations and costs among DFU patients in Russia was assessed on the basis of published Russian data and experts’ survey. The expected effectiveness of interventions was derived from the international publications. Costs were estimated on the basis of reimbursement rates in public medical insurance and published local costing. RESULTS: There are 1,000 DFU patients at the current rate of hospitalizations will require additional annual spending of €532,520, and the expected annual number of major amputations will decrease by 41. The ICER for this intervention is €10,216, per prevented amputation, which is almost 2 times higher than the costs associated with major amputation at the current moment. For the preventive services, if all patients are compliant, additional costs per prevented amputation are slightly lower - €10,216, but they will below the cost of major amputation. CONCLUSIONS: Both interventions require considerable additional budget spending. Preventive measures, if all the patients follow the recommendations, are more cost effective than introduction of hospital MDT.
and SU would generate substantial cost savings in France. Canagliflozin 300mg showed similar outcomes to linagliptin, suggesting that the treatments are similar in effectiveness, and is thus likely to be a highly cost-effective treatment option.

PDBB8 LAYERING INTERVENTIONS FOR TYPE-2 DIABETES PREVENTION USING THE SPHR DIABETES MODEL

**OBJECTIVES:** We have developed a model to evaluate type-2 diabetes prevention interventions. The model allows flexible layering of multiple interventions in order to determine the optimal combination of strategies for maximal cost-effectiveness. Our objective was to demonstrate the utility of the model for analysis of multiple interventions in different population sub-groups. **METHODS:** A model of type-2 diabetes prevention was developed using a micro-simulation framework. Individual patients have a profile of metabolic factors including body mass index, systolic and total cholesterol, and can be diagnosed with diabetes, cardiovascular disease, cancer, osteoarthritis or microvascular complications of diabetes over the course of a lifetime. Interventions targeting metabolic factors influence the likelihood of developing diabetes and when diagnosed, there are different intervention combinations modelled, using the assumption of either additive, synergistic or antagonistic effects in individuals subject to multiple interventions. **RESULTS:** All interventions generated cost-savings and QALY gains, with the screening intervention performing particularly well, followed by the soft drinks tax. Combining interventions results in roughly additive effects; this holds whether the layering is additive, synergistic or antagonistic due to the relatively low proportions of individuals subject to multiple interventions (DPP4i), compared to the glucagon-like peptide-1 (GLP-1) analogues, was found to be almost as cost-effective as combining all five interventions, in particular, a soft drinks tax combined with a screening programme is likely to be one of the most cost-effective options. **CONCLUSIONS:** The SPHR Diabetes Model is a useful tool for analysing the cost-effectiveness of different diabetes prevention interventions, either singly or in combination. This will enable development of intervention strategies tailored to the needs of the target population.

PDBB7 COST-EFFECTIVENESS OF DAPAFLIGLITON VS DFP-4 INHIBITORS AS MONOTHERAPY IN THE TREATMENT OF TYPE 2 DIABETES MELLITUS FROM A UK HEALTH CARE PERSPECTIVE

**OBJECTIVES:** To explore the cost-effectiveness of dapagliflozin, the first-in-class sodium-glucose co-transporter-2 (SGLT-2) inhibitor, compared to the dipeptidyl peptidase-4 inhibitor (DPP4i) class, as monotherapy for the treatment of type 2 diabetes mellitus (T2DM) that is inadequately controlled on metformin and a sulphonylurea (met SU) combination, the first-line treatment option from a UK health care perspective for patients with T2DM who are inadequately controlled on metformin.

**RESULTS:** The validated CARDIFF diabetes model was used. Clinical inputs for the model were sourced from a systematic review and network meta-analysis (NMA) in triple therapy that found clinically relevant differences between dapagliflozin and DPP4i’s. A UK health care perspective was used for costs, and quality-adjusted life years (QALYs) were calculated from utility data sourced from the published literature. To assess uncertainty, univariate sensitivity analyses were performed. Alterations to the HbA1c switching threshold and assumptions on weight extrapolation were considered, in order to investigate the impact of different profiles of treatment change and longer-term adherence on the modelled outcomes. The ICER was most sensitive to varying the weight differential that is created at treatment initiation, which is generated by the better weight profile of dapagliflozin compared to DPP4i, over the whole time horizon. The highest estimate arose when the weight differential was maintained for 2 years and there was a higher switching threshold for initiating insulin. **CONCLUSIONS:** Dapagliflozin monotherapy has potential as a cost-effective treatment option from a UK health care perspective for patients with T2DM who are intolerant to metformin and are inadequately controlled by diet and exercise alone, based upon a range of explored scenarios. This study also demonstrates the value of performing scenario analyses to inform decision-making.

PDBB8 COST-EFFECTIVENESS OF DAPAFLIGLITON COMPARED TO DFP-4 INHIBITORS AS TRIPLE THERAPY IN COMBINATION WITH METFORMIN AND A SULPHONYLUREA IN THE TREATMENT OF TYPE 2 DIABETES MELLITUS FROM A UK HEALTH CARE PERSPECTIVE

**OBJECTIVES:** To investigate the impact of different profiles of weight change and longer-term adherence on the modelled outcomes. The ICER was most sensitive to varying the weight differential that is created at treatment initiation, which is generated by the better weight profile of dapagliflozin compared to DPP4i, over the whole time horizon. The highest estimate arose when the weight differential was maintained for 2 years and there was a higher switching threshold for initiating insulin. **CONCLUSIONS:** Dapagliflozin monotherapy has potential as a cost-effective treatment option from a UK health care perspective for patients with T2DM who are intolerant to metformin and are inadequately controlled by diet and exercise alone, based upon a range of explored scenarios. This study also demonstrates the value of performing scenario analyses to inform decision-making.

PDBB9 THE PLACE OF DFP-4 INHIBITORS IN THE TREATMENT ALGORITHM OF DIABETES TYPE 2: A SYSTEMATIC REVIEW OF COST-EFFECTIVENESS STUDIES

**METHODS:** We searched the CRD York, NICE Health Technology Assessment, Tufts CEA Registry, and MEDLINE (PubMed) databases, and grey literature through 2014 to identify cost-effectiveness, cost-utility and cost-benefit studies of new inhibitors of DFP-4 versus other antidiabetics for diabetes treatment. Three investigators independently reviewed all potentially relevant titles and abstracts (1st screening), and subsequently screened full-text articles (2nd screening), according to pre-established inclusion criteria. We restricted our sample to studies with a lifetime or near-lifetime horizon, and adopting either a societal or a health care perspective. **RESULTS:** A total of 57 studies were identified. From these, 17 studies were accepted after the 1st screening, and after the 2nd screening, 12 studies were accepted, which were used to establish an evidence-based treatment algorithm. All studies consisted in cost-utility analyses. Most studies were based on a single randomized trial per pathway. Each pathway was assessed in six studies, within which 18 studies were found to be relevant. **CONCLUSIONS:** In summary, the evidence was insufficient to recommend one treatment option over another. Further research is needed to establish a clear evidence-based treatment algorithm.