The primary endpoint was changes in glycated haemoglobin (HbA1C) and secondary endpoints included changes in body mass index (BMI), blood pressure (BP), biochemical parameters and percentage of patients reporting adverse effects of therapy.

Data were analysed using SPSS version 20.0 and comparisons of continuous variables were performed using Student's *t* test.

Results Eighty-three patients were included (54.2% male). Mean age 56.76±9.87 years, mean duration of T2DM 9.46 ±5.46 years. Prior to treatment, patients had BMI 37.68 ±6.82 Kg/m^2, systolic BP (SBP) 138.80±15.46 mmHg, diastolic BP (DBP) 82.87±10.16 mmHg, fasting glucose 187.33 ±55.11 mg/dL, HbA1C 8.62%±1.3%, total cholesterol 178.1 ±35.74 mg/dL, LDL cholesterol (c-LDL) 97.66±32.16 mg/dL, HDL cholesterol (c-HDL) 44.54±13.78 mg/dL, triglycerides 197.64±24.19 mg/dL, GOT 29±20.311 U/L and GPT 39.88 ±31.69 U/L.

Clinical and biochemical values at 6 months were: BMI 36.08±6.32 Kg/m^2 (p<0.001), SBP 132.76±12.11 mmHg (p<0.001), DBP 77.41±5.62 mmHg (p<0.000), fasting glucose 165.16±56 mg/dL (p=0.003), HbA1C 7.73%±1.33% (p<0.001), total cholesterol 170.6±39.19 mg/dL (p=0.230), c-HDL 46.25±15.03 mg/dL (p=0.151), c-LDL 87.74±30.5 mg/dL (p=0.007), triglycerides 198.29±22.29 mg/dL (p=0.957), GOT 24.97±12.49 U/L (p=0.051) and GPT 32.76±18.24 U/L (p=0.026). Any adverse effect was reported.

Statistically significant differences were found regarding several variables, such as BMI, HbA1C, fasting glucose, blood pressure, c-LDL and GPT. No differences were found in total cholesterol, c-HDL, triglycerides and GOT.

Conclusion Six-month therapy with Liraglutide improves not only glycemic control (HbA1C, fasting glucose) but also cardiovascular risk factors (BMI, BP, c-LDL), reducing SBP and DBP by 1 to 5 mmHg. Therefore, Liraglutide may offer an alternative therapy for these patients and will help provide extra cardiovascular benefits.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

4CPS-006 PHARMACIST-LED MEDICINE RECONCILIATION AT DIABETES OUTPATIENT CLINIC

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Background Pharmacist-led interventions decrease drug-related problems (DRPs) and improve clinical outcomes. Patients with multiple-drug therapy and patients transitioning across different care settings are at higher risk of experiencing DRPs.

Purpose This study aims at developing an ambulatory clinical pharmacist service at the Diabetic Hospital Out-Patient clinic focusing on medicine reconciliation and transmission of treatment updates to the community pharmacist responsible for patient follow-up.

Material and methods This is an ongoing prospective investigational study. Patients>18 years of age and having at least one anti-diabetic medication are eligible to participate in the study. The clinical pharmacist meets the patients and during a medicine reconciliation session identifies any DRPs that are discussed with the physician. A Transition of Care Document capturing any changes in medication and the current patient treatment is compiled and sent to the community pharmacy, identified by the patient, which is responsible for chronic medications follow-up.

Results Thirty-five patients have been included in the study to date. Fifty-six DRPs were identified and classified into five different categories. Lack or misinterpretation of information was the most common DRP (83%) followed by treatment not according to Joint British Diabetes Societies guidelines (63%), requirement of additional drug (52%) and inappropriate timing of administration and/or dosing intervals (37%).

Metformin (77%) and the statins (49%) were the two most common drugs requiring interventions. The hospital pharmacist provided recommendations for the identified DRPs, either verbally, in the case of educational interventions or written in all other instances. Seven out of eight interventions were accepted by the physicians.

Conclusion The DRPs identified were addressed during the intervention by the hospital pharmacist at the Out-Patients' Clinic and the Transition of Care Document was used to transmit information on updates in treatment to the community pharmacy that follows-up the patient for chronic medication refills.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Pharmacy Department at the University of Malta and the Diabetic Outpatient Clinic at Mater Dei Hospital.

No conflict of interest.

4CPS-007 COST MINIMISATION STUDY: SWITCH VIAL TO PEN IN GERIATRICS

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Background Insulin glargine (IG; original drug and biosimilar) is on the market in vial or pen presentations with different costs. The biosimilar drug is less expensive than the original drug.

Purpose The main objective was to evaluate the incremental cost of changing IG vial by (original and biosimilar IG) pen over a 1 year period and the nurses' implementation and acceptability in geriatric wards.

Material and methods IG prescription (number of UI per patient and IG vial consumption) and costs were retrospectively collected over a 1 year period (August 2017 to August 2018). Nurses answered a survey in each geriatric ward to make an inventory of practices and to assess the acceptability of replacing vials with pens. The comparison of security and ease of use of vial and pen (0 to 10 score, 0 bad possibility and 10 best possibility) were performed using the Wilcoxon signed-rank test.

Results Three-hundred and fifty-three patients were included, and the total cost for 108 vials of IG vials was € 2700, equivalent to 408 pens of IG for € 775.2. The use of vials represents a cost of € 7.65 per patient, whereas the use of pens represents a cost of € 2.19 per patient. Prescribing biosimilars could be a strategic approach to minimise pharmaceutical costs: in our study the use of 408 IG biosimilar pens would represents a cost per patient of € 0.17. In 18 responses to the survey, six nurses did not want to use the pens for various reasons: 'too many pens in the ward', 'waste', 'no

visibility on the quantity injected'. The pens have a best security assessment (mean score difference=1.94, p=0.014) and ease-of-use assessment (mean score difference=3.05, p=0.007) rather than vials. Fifty-five per cent of nurses think, mistakenly, that the pen is more expensive than the vial.
Conclusion This study showed that using IG pens rather than vials and biosimilar prescription would be cost saving. This result shows that nurses are ready to accept replacing vials with pens.

REFERENCES AND/OR ACKNOWLEDGEMENTS
No conflict of interest.

4CPS-008 IMPACT OF PHARMACEUTICAL INTERVIEW IN PATIENT ACCEPTANCE OF INSULIN GLARGINE'S BIOSIMILAR 100UI/ML

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Background The insulin glargine's biosimilar (IB) has been marketed since 2016, and is far less costly for the healthcare system, but their prescription is not yet predominant. To prescribe a biosimilar, the patient must be informed on what constitutes a biosimilar and must provide his agreement.
Purpose The aim of this study is to assess the knowledge of diabetic patients concerning their therapy by insulin glargine, to inform them about biosimilars and to assess the impact of a pharmaceutical interview in IB patient acceptance.
Material and methods We carried out a prospective study during 2 months (June to July 2018) in our diabetology department. All patients hospitalised with insulin glargine were included. We used a questionnaire to analyse knowledge of the patients about biologics drugs and biosimilars. After a pharmaceutical interview carried out by a resident pharmacist to present biologics drugs and biosimilars to patients, we evaluated, with a questionnaire, their acceptance of biosimilars switch.
Results As of now, the rate of insulin glargine prescription is 71% at the hospital and 54% in our diabetology unit. Fifty-four patients were included (sex-ratio: 0.64; average age: 51, SD:19.51; Type-1 diabetes: 48%). Among these, 17% were using IB. Ninety-four per cent of the patients did not know what a biologic drug was. Among the patients using IB, 89% did not know they were having an IB. Ninety-eight per cent of patients included wanted to receive information about biosimilars during a pharmaceutical interview. After being informed about biosimilars, 85% of patients would be in favour of the biosimilars switch.
Conclusion This study shows that there is a real lack of patients' knowledge and information concerning insulin therapy and biosimilars. It also proves that pharmaceutical interviews can improve the acceptance of biosimilars switch. Information sheets will be used in pharmaceutical interviews to improve this knowledge and, at the end, to improve the prescriptions of the IB. Training sessions for the residents could be also established to reach the IB prescriptions' objective. This will help to improve the acceptance of the IB with diabetic patients and to assess the potential economic impact of switching the insulin with a biosimilar.

REFERENCES AND/OR ACKNOWLEDGEMENTS
No conflict of interest.

4CPS-009 EVALUATION OF THE SAFETY OF INHIBITORS OF THE CO-TRANSPORTER 2 IN A UNIVERSITY CARE HOSPITAL

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Background Sodium-glucose co-transporter 2 (SGLT2) inhibitors are used in patients diagnosed with type-2 diabetes, either alone or in combination with other anti-diabetic drugs. Recently, the Spanish Agency of Medicine and Health Products published several informative notes warning of serious adverse events caused by these drugs. Furthermore, they are more expensive than the alternatives and the efficacy seems to be lower, so it becomes especially important to clarify the risks associated with their use.
Purpose To evaluate the safety of the treatment with inhibitors of the co-transporter 2 in patients with type-2 diabetes.
Material and methods A retrospective and observational study was performed in a university hospital. Between January 2017 and August 2018, patients who had active treatment with canagliflozina, empagliflocina or dapagliflozina in their discharge reports were selected.

Data collected and obtained from medical history records, were: sex, age, drugs' reactions, time in treatment, total number of drugs and which service prescribed the drug. Later, the Karch–Lasagna modified algorithm was applied in order to analyse the relationship between treatment and the occurrence of adverse effects.
Results One-hundred and ten patients were selected, out of which 25 (22.7%) had 30 adverse events, which were: 15 infections of the urinary tract, nine gastrointestinal symptoms, three non-traumatic amputation of the lower limbs, two dry mucous membranes and one ulceration.

The median age of the patients with drugs' reactions was 75 years, the majority being women. The median of the total drugs that patients had was 10. The Karch–Lasagna modified algorithm was applied and all gastrointestinal symptoms, ulcers and dryness of mucous membranes obtained a conditional category. On the other hand, urinary tract infections were conditional in 11 patients and possible in four. Regarding amputation, one was conditional and two possible.

Nine of the patients suspended treatments after adverse events, however, 16 continued. The drugs were prescribed mostly by the internal medicine and cardiology department.
Conclusion There was a high percentage of patients with adverse drug reactions (22.7%). Urinary tract infections and non-traumatic amputation of the lower limbs were adverse events with greater accountability, which coincided with the informative notes published. Therefore, the risk-benefit relationship should be closely valued before using SGLT2 inhibitors.

REFERENCES AND/OR ACKNOWLEDGEMENTS
No conflict of interest.