Vol 17 Suppl A 2015

Diabetes & Primary Care

The journal for healthcare professionals with an interest in primary care diabetes

Supplement A

POSTER ABSTRACT BOOK

11th National Conference of the Primary Care Diabetes Society

Birmingham, 5–6 November 2015

Diabetes & Primary Care is published in association with the Primary Care Diabetes Society

PCDS Primary Care Diabetes Society

The conference poster award is supported by Novo Nordisk

- The abstracts in this supplement have been edited minimally from the submitted versions, primarily for house style on units.
- For full authorship details, please refer to the posters.
- Funding declarations are presented only where explicitly supplied with the abstracts. For full details, please refer to the posters.

P1

Can a follow-up session after delivery of structured education (DESMOND) encourage longer term change in people with type 2 diabetes?

Submitting author: ***Parker J***, *Gibraltar Health Authority, Gibraltar*

The DESMOND structured education programme has been delivered with success in Gibraltar since 2012. We follow the curriculum required to meet the quality assurance standards set by the DESMOND training programme. In addition to the patient satisfaction questionnaire we also monitor the progress of participants before and 3 months after the DESMOND programme and have been encouraged with the results of improved HbA_{1c} and cholesterol levels. Data demonstrate before and after results of HbA_{1c} and cholesterol. Our mean reduction in HbA_{1c} post-DESMOND is 1%. This level of evaluation was not a requirement of the DESMOND programme. In response to requests from participants we offer a telephone follow-up service at 3 months and a group annual "reunion" allowing people to share their experiences. These interventions are cheap to implement; additional costs are attributed to nurse time and telephone charges but these additional interventions have a positive impact upon patient outcomes. **Implications for UK practice:** It is usual for a participant of the DESMOND programme to attend a regional centre with trainers whom they may not know and whom they are unlikely to have future contact with. It could be suggested that one of the ways of consolidating learning and encouraging concordance is for the referrer to the course (usually a practice nurse or GP) to arrange a blood test and telephone follow-up to gauge the outcome of the DESMOND programme. ■

P2

Non-insulin injectables in primary care

Submitting author: ***Walid H***, *Doha, Qatar*

Background: The use of new antidiabetic medications has markedly increased in the past few years. Injectable forms other than insulin are now available to treat diabetes, changing the existing beliefs of patients that injections are only insulin. **Aim/objective:** To screen the healthcare providers' perception towards the use of injectable non-insulin treatment of diabetes. **Methods:** We have undertaken a survey questionnaire among doctors and nurses screening their perception about the concept of prescribing and administration of non-insulin injectables. Specific questions were addressed based on: ease of use, patients' compliance, cost effectiveness and related necessary counselling. **Results:** Seventy per cent of the sample stated that the new non-insulin injectable is not as cost effective as older forms and that more counselling is needed to introduce this concept into clinical practice, which ultimately impacts the consultation duration. **Conclusion:** Indications for non-insulin injectable forms should be thoroughly reviewed and patients carefully selected. Appropriate time should be given for counselling to ensure patient compliance when these medications are prescribed. ■

P3

What a difference a year makes

Submitting author: ***Nevin N***, *Great Sutton Medical Centre and Countess of Chester Hospital, Cheshire*

Background: The prevalence of T2DM is increasing in the UK and the impact is being felt in primary care. There is a drive nationally and locally to move patient care closer to the patient. However, conflicting pressures from other increasing demands on primary care, both clinically and financially, make it difficult to justify having a GP-led diabetes clinic. **Aims/objectives:** To quantify the impact of a GP-led diabetes clinic. **Methods:** A monthly GP-led diabetes clinic was set up at Great Sutton Medical Centre in January 2014. The GP is a Clinical Assistant at the Countess of Chester Hospital. Patients with either T1DM or T2DM were eligible for review. Patients were referred by the practice team. Patients were reviewed in the surgery, or in their own homes. **Results:** Fifty-eight patients were reviewed in 2014. Follow-up HbA_{1c} results were reviewed on 22 April 2015, allowing time for changes in HbA_{1c} to take effect. Follow-up results are available for 45 out of 58 patients. The mean reduction in HbA_{1c} was 17.8 mmol/mol ($P<0.05$); 32.7% of patients had an HbA_{1c} <59 mmol/mol at the end of the study period. Ten patients moved into the QOF payment range of <75 mmol/mol. **Conclusion:** A GP-led diabetes clinic can achieve a statistically significant improvement in glycaemic control, with a subsequent improvement in both patient and practice outcomes. ■

P4

Metformin project

Submitting author: ***Dunn G***, *Chiltern CCG, Buckinghamshire*

Background: The 2013 National Diabetes Audit highlighted significant variations in care processes received by patients with type 2 diabetes in a CCG where spend on diabetes was high and outcomes were in the lowest quartile nationally. Local audits also identified variation in practice in the prescribing of metformin. Delays in initiation and titration meant many patients remained on sub-optimal doses or took 3–4 years to reach the maximum dose. **Aims:** To optimise metformin initiation and titration by promoting patient self-management, upskilling of healthcare professionals and standardisation of care across the CCG. **Method:** Diabetes was prioritised by the CCG and the "metformin project" became the first initiative of a newly formed Diabetes Team. Baseline audits identified patients not treated with metformin or on a maximum tolerated dose with an HbA_{1c} >48 mmol/mol. Training and support using new local clinical guidelines and the introduction of a patient self-titration leaflet was introduced. A monthly Diabetes Bulletin was developed to underpin training. **Results:** Thirty-two out of 34 practices participated in four localities. In one locality of eight practices with 3359 patients: 188 were not on metformin, and 414 not on maximum dose. Six months post-audit this improved to 27 and 99 patients respectively. **Conclusion:** The focus on timely initiation and titration of metformin has improved clinical outcomes, with 10% more patients achieving their target HbA_{1c} in 6 months. There were reduced consultations as a result of the patient self-titration leaflet and an improvement in clinical care delivery and standardisation of practice. ■

P5

Development of a diabetes education resource pack to support the management of people with diabetes in a care home setting

Submitting author: ***Thomas L***, *Community Resource Team, Carmarthenshire*

Background: Three Community Diabetes Specialist Nurses were appointed to cover the county of Carmarthenshire in the then Carmarthenshire NHS Trust. Evidence of gaps in diabetes care within care homes was identified. A request came from a Social Services Resource Manager to provide a diabetes education update and blood glucose monitoring training in their residential care home establishments. **Aims/objectives:** (1) To provide equity of care to all people with diabetes in a care home setting in Carmarthenshire. (2) To increase diabetes knowledge and skills of care home staff. (3) To establish the Community Diabetes Nurse role within the care home setting. **Methods:** Needs analysis questionnaires were sent to all social services and private sector care homes, which identified gaps in care for people with diabetes in a care home setting. **Results:** Joint working was carried out with the Carmarthenshire Local Authority Learning and Development department to provide 2 full study days a year in the care and management of the person with diabetes and competency-based blood glucose monitoring training in a care home setting. Development of a resource pack for care home staff in Carmarthenshire was also

undertaken. **Conclusion:** (1) Excellent evaluations were received from training days. (2) In 2010, an amalgamation of three trusts into Hywel Dda University Health Board was followed by a request to roll out resources to the rest of the Health Board. (3) In 2013, an approach was made by Powys Teaching Health Board Community Diabetes Specialist Nurses, which resulted in a working party group. (4) In 2014, supported by an education grant from Novo Nordisk Ltd, the working party was able to format and update the document into an easily adaptable resource for care home staff in residential and nursing homes. There is an anticipated launch of an updated version in December 2015. ■

P6

Designing an effective culturally competent diabetes care service in primary care: A participatory research study to implement evidence

Submitting author: ***Zeh P***, *University of Warwick, West Midlands*

Aims: Systematic reviews have identified effective interventions for improving cultural competence in diabetes healthcare. This study aimed to explore and implement some of these findings by designing an interventional framework to cater for the needs of ethnic minority groups (EMGs) with diabetes in Coventry. **Methods:** A purposive participatory case study was conducted in one Coventry inner-city practice between April 2012 and March 2013, using weekly participant observations, monthly participatory group meetings and one post-participatory one-to-one semi-structured interview with three patients, four general practice staff and two multilingual link workers. Data were analysed using qualitative methods. The research explored cultural issues with staff and patients within the general practice and designed a culturally competent diabetes service framework. **Results:** The operational activities of this general practice involving staff and patients demonstrated both strongly evidence-based culturally competent and less culturally sensitive practices. For instance, some ethnic minority patients with cultural differences were consulted by healthcare professionals from the same ethnic backgrounds, thereby ensuring cultural and linguistic concordances. However, there were also occasions where children interpreted for their parents and where patients with language barriers consulted without the use of professional or lay interpreters. The practice prioritised the designing of a Diabetes Specialist Multilingual Link Worker model, to reduce the inequality in diabetes primary care service provision. Key elements of the model were specialist training and education, function of the multilingual link worker, information sharing, partnership working and service commissioning. **Conclusions:** A Diabetes Specialist Multilingual Link Worker Framework to address deficits in general practice cultural competence was developed for pilot testing. The involvement of a broad group of stakeholders ensures interventions to improve EMGs' access to effective diabetes care in primary care are appropriate and feasible. This may ultimately result in greater effectiveness. **Declaration:** This is part of a PhD research fellowship funded by NHS West Midlands, hosted by UHCW NHS Trust. The project was supported by a grant from Novo Nordisk. ■

P7

A pilot study investigating whether 8 weeks of intermittent fasting (IF) could induce remission of diabetes in obese type 2 diabetic patients on metformin

Submitting author: ***Hookey A***, *Bristol Community Health, Bristol*

Aims: The pilot study aims to determine whether 8 weeks of IF will induce remission of type 2 diabetes and whether the effects are maintained at 1 year. **Methods:** Participants (n=3; one female and two males) were recruited once DESMOND education had been attended and in accordance with inclusion and exclusion criteria. Participants followed the IF diet for 8 weeks: 2 non-consecutive fast days of 500 kcal for woman and 600 kcal for men, and normal habitual diet for 5 days. Participants were given a diet sheet for guidance and recipe ideas. BMI, height, weight, HbA_{1c}, cholesterol, and fasting blood glucose were measured at week 1 and week 8. There were follow-ups 6 and 12 months post-diet. Due to small sample size statistical analysis was not carried out. **Results:** Weight loss occurred in all three participants. HbA_{1c} measurements taken 5 months post-diet were in the non-diabetic range. Follow-up data on fasting blood glucose was incomplete post-diet and so was not commented on. At 1-year follow-up two participants attended. Participant 1 had lost a further 1.9 kg, diabetes medications remained the same but cholesterol medication reduced from 80 mg/day to 20 mg/day. Participant 2 had diabetes medication (metformin) reduced from four times a day to three times a day as a result of an improved HbA_{1c}. A focus group highlighted common themes: support, change, barriers and education. **Conclusion:** IF is a promising intervention for reducing HbA_{1c} to the non-diabetic range (cut-off, 48 mmol/mol) in obese type 2 diabetic patients on metformin. Qualitative results suggest that IF provided education regarding portion sizes and that support is essential. Further research should be aimed towards larger-scale studies investigating the potential benefits of providing an additional weight loss intervention which may improve diabetic outcomes. ■

P8

Low-carb high-fat X-PERT structured education

Submitting author: ***Deakin T***, *X-PERT Health, West Yorkshire*

Background: We compared outcomes in people attending a standard X-PERT Diabetes Programme (XD) with those attending an adapted low-carb high-fat X-PERT Programme (LCHF). Both were delivered over 6 weeks and contained 15 hours of education. **Method:** Thirty-three patients attending LCHF were provided with step-by-step guidance to reduce their carb intake to less than 50 g/day whereas 33 patients attending XD were taught how to assess their carb intake and set goals based on their wishes. Outcomes were collected at baseline and 6 weeks. **Results:** Completion rate was 71.9% in the LCHF group and 79.3% in the XD group. Carb intake reduced from 200.5 g/day to 56.6 g/day in the LCHF group (P<0.05) and increased from 167.2 g/day to 193.5 g/day in the XD group (not significant). Weight reduced by 2.8 kg in the LCHF group (P=0.005) and by 1.5 kg in the XD group (P=0.006). The between-group difference was 1.3 kg in favour of LCHF (P=0.037). Reduction in waist circumference was significant within the LCHF group (–3.3 cm; P=0.048) but not the XD group (–1.2 cm; P≥0.05). There was a 19% improvement in empowerment, 25.6% improvement in PAID and 98% patient satisfaction in the LCHF group. For the XD group these figures were 21%, 53.3% and 95.6%, respectively. **Conclusion:** Both groups were well attended, were successful in achieving weight loss, improved empowerment in self-management and reduced PAID. However, the LCHF group lost significantly more weight while also reducing their waist circumference, whereas the XD group reported greater reductions in PAID. Outcomes will be repeated at 6 months. ■

P9

Audit results from September 2013 to 2015 for X-PERT structured education

Submitting author: ***Deakin T***, *X-PERT Health, West Yorkshire*

Aim: X-PERT Structured Education has demonstrated improved clinical and psychosocial outcomes. To ensure national implementation meets NICE criteria and replicates clinical trial results, continuous audit is conducted. **Methods:** X-PERT Educators collect and enter patients' baseline, 6-month and annual results onto the X-PERT Audit Database. **Results:** In all, 2451 X-PERT Programmes were delivered to 29 414 people with new and established diabetes between September 2013 and 2015. Ethnicity: 81% white and 19% BME groups. Other findings: 75.8% attended at least one session, of which 80.6% completed the programme; patient evaluation scores were 95%; empowerment scores increased by 18.9%; HbA_{1c} reduction was 7.4 mmol/mol (95% CI, 6.7–8.1) at 6 months and 6.7 mmol/mol (95% CI, 6.0–7.4) at 1 year; weight loss was 3.1 kg (95% CI, 1.9–4.3) at 6 months and 8.5 kg (95% CI, 7.3–9.7) at 1 year; waist circumference reduction was 2.9 cm (95% CI, 0.7–4.3) at 6 months and 2.9 cm (95% CI, 1.3–4.5) at 12 months; there was a 3.2 mmHg (95% CI, 2.3–4.01) reduction in systolic

and 1.9 mmHg (95% CI, 1.3–2.5) reduction in diastolic blood pressure at 1 year; there was a 0.4 mmol/L reduction in non-HDL cholesterol (95% CI, 0.35–0.45) and 0.3 mmol/L reduction (95% CI, 0.25–0.35) in triglycerides at 1 year. At 1 year 80% of patients were prescribed diabetes medication, with 8.3% (95% CI, 7.1–9.5) having reduced their requirement from baseline. **Conclusions:** National implementation of X-PERT Education has met audit standards. X-PERT is well attended and evaluated and results in improved clinical and psychosocial outcomes amongst people with newly diagnosed and existing diabetes, with a reduced demand for diabetes medication. ■

P10

Duodenal mucosal resurfacing (DMR) as a new endoscopic treatment for type 2 diabetes

Submitting author: ***Haidry R***, *University College London Hospital, London*

Background: Almost 40% of patients with type 2 diabetes (T2D) in the UK remain poorly controlled despite recent medical advances. Interventions that prevent nutrient contact with the duodenum (i.e. bariatric surgery, intra-luminal sleeve) improve glycaemic control in T2D. Duodenal mucosal resurfacing (DMR) is a non-invasive, endoscopic procedure that potentially offers similar metabolic benefit through ablation and subsequent healing of the duodenal mucosa. **Objectives:** Patients in the primary care setting with poorly controlled T2D (i.e. HbA_{1c} >7.5% on up to two oral antidiabetic agents) were enrolled in a proof-of-principle trial of DMR to assess safety and effectiveness. **Methods:** Thirty-nine patients at a single centre in Santiago, Chile, in a dose-ranging study of Long Segment DMR (LS-DMR; 9.3 cm ablated; *N*=28) versus Short Segment DMR (SS-DMR; 3.4 cm ablated; *N*=11). HbA_{1c}, fasting glucose and 2-hour postprandial glucose were assessed before and at 2, 4, 12 and 24 weeks post-procedure. **Results:** There was an HbA_{1c} reduction of 1.2% at 6 months in the full cohort, despite medication reductions in more than half of patients. There was an HbA_{1c} reduction of 2.5% with LS-DMR at 3 months post-procedure versus 1.2% with SS-DMR (P<0.05). There was modest weight reduction (2–4%), but no apparent correlation between degree of weight loss and glycaemic improvement 3 months post-procedure. Three patients experienced a duodenal stenosis resolved with balloon dilation. **Conclusion:** DMR is a safe and well-tolerated procedure. Early clinical results suggest DMR as a potential therapeutic option in primary care. A randomised, controlled trial including one UK treating site (UCLH) is underway. ■

P11

Efficacy of long-acting once-weekly dulaglutide compared with short-acting twice-daily (bid) exenatide in patients with type 2 diabetes mellitus (T2DM): A *post hoc* analysis to determine the influence of baseline HbA_{1c} in the Assessment of Weekly AdministRation of dulaglutide in Diabetes-1 (AWARD-1) trial

Submitting author: ***Tahbaz A***, *Eli Lilly and Company, Hampshire*

Background: The AWARD-1 trial compared once-weekly dulaglutide 1.5 mg and dulaglutide 0.75 mg to placebo and exenatide 10 µg bid in patients with T2DM on metformin and pioglitazone. **Aims:** To investigate the response to long- and short-acting glucagon-like peptide-1 receptor agonists based on baseline HbA_{1c} levels using data from the AWARD-1 trial. **Methods:** The changes from baseline in HbA_{1c} and percentages of patients reaching HbA_{1c} targets (<7.0%, ≤6.5%) with dulaglutide 1.5 mg and dulaglutide 0.75 mg at 26 weeks were analysed by baseline HbA_{1c} (<8.5%, ≥8.5%) and compared with those for placebo and exenatide. Results are presented (LS mean [SE]) for the change from baseline in HbA_{1c} and percentages achieving glycaemic targets, the <8.5% group followed by the ≥8.5% group. **Results:** LS mean changes from baseline in HbA_{1c} for dulaglutide 1.5 mg (–1.16[0.07]%; –2.37[0.10]%) were greater compared with placebo (0.17[0.10]%; –0.76[0.16]%) and exenatide (–0.64[0.07]%; –1.86[0.11]%) (P<0.001, all comparisons). For both baseline groups, significantly more dulaglutide 1.5 mg patients reached targets of <7% (92%, 47%) and ≤6.5% (80%, 26%) compared with placebo (<7%: 55%, 10%; ≤6.5%: 32%, 3%) and exenatide (<7%: 65%, 21%; ≤6.5%: 50%, 9%) (P<0.05, all comparisons). Dulaglutide 0.75 mg also demonstrated significant changes for both baseline groups versus placebo (P<0.05, both outcomes; all comparisons). Statistical significance was not achieved when comparing dulaglutide 0.75 mg with exenatide in the baseline HbA_{1c} ≥8.5% groups. **Conclusion:** Regardless of baseline HbA_{1c}, once-weekly dulaglutide 1.5 mg and dulaglutide 0.75 mg showed a robust reduction in HbA_{1c} in this population of patients with T2DM. ■

P12

Clinical inertia – the reality of type 2 diabetes patients uncontrolled on basal-only or basal–bolus insulin in the UK

Submitting author: ***Khunti K***, *Leicester Diabetes Centre, East Midlands*

Background: Type 2 diabetes (T2D) is a progressive disease, with most patients eventually requiring insulin therapy. NICE guidelines recommend insulin initiation for patients with HbA_{1c} ≥7.5% (≥58 mmol/mol). **Aims/objectives:** We assessed the distribution of HbA_{1c} at insulin initiation and in current users of two insulin regimens in patients with T2D treated in UK primary care. **Methods:** Using records from 150 UK GP practices (selected cohorts, patient data, IMS Information Solutions UK Ltd, 12 months to December 2014), we report HbA_{1c} levels for patients with T2D initiating (insulin-naïve, HbA_{1c} recorded ≤3 months prior to initiation) and currently using (HbA_{1c} recorded ≤12 months prior to December 2014) basal-only (BOI) or basal–bolus insulin (BBI; BBI initiation includes addition of bolus insulin ≤3 months after BOI initiation; all groups ± GLP-1 RA ± OADs). **Results:** Mean HbA_{1c} was 10.1% (86.9 mmol/mol) at initiation of BOI (*n*=19 008), and 9.8% (83.6 mmol/mol) at initiation of BBI (*n*=4608); HbA_{1c} was ≥11.0% (≥96.7 mmol/mol) in 32% (BOI) and 33% (BBI) of these patients, respectively. Mean HbA_{1c} was 8.5% (69.4 mmol/mol) in patients currently using BOI (*n*=110 640), and 8.6% (70.5 mmol/mol) in patients currently using BBI (*n*=142 512); HbA_{1c} was ≥7.5% in 69% (BOI) and 75% (BBI) of these patients respectively. **Conclusion:** Mean HbA_{1c} of patients with T2D initiating BOI and BBI was substantially higher than the NICE target of ≥7.5%; and more than two-thirds of current users had HbA_{1c} ≥7.5%. These HbA_{1c} levels appear suboptimal and could indicate clinical inertia, warranting earlier insulin initiation and intensification in UK primary care. ■

P13

Efficacy and safety of once-weekly dulaglutide and once-daily insulin glargine at 52 weeks' treatment in patients with type 2 diabetes (T2D) in the Assessment of Weekly AdministRation of dulaglutide in Diabetes-2 (AWARD-2) study, stratified by duration of diabetes (<5 years, ≥5 to <10 years, ≥10 years)

Submitting author: ***Adetunji O***, *Eli Lilly and Company, Hampshire*

Objectives: To determine the impact of duration of diabetes (DoD) on the efficacy and safety of dulaglutide and insulin glargine in patients with T2D. **Methods:** *Post hoc* subgroup efficacy and safety analyses at 52 weeks were performed by baseline DoD (<5, ≥5–<10, ≥10 years) for patients (*N*=807; mean [SD] disease duration, 9.1 [6.0] years) receiving dulaglutide 1.5 mg (*N*=273), dulaglutide 0.75 mg (*N*=272) or insulin glargine (*N*=262), all combined with glimepiride and metformin. **Results:** Baseline patient characteristics were similar between treatment groups according to DoD. For each treatment arm (dulaglutide 1.5 mg, dulaglutide 0.75 mg and insulin glargine), LS mean (SE) changes from baseline in HbA_{1c} were (MMRM): DoD <5 years: –0.88(0.14)%, –0.66(0.14)%, –0.44(0.14)%; ≥5–<10 years: –1.07(0.10)%, –0.73(0.11)%, –0.58(0.10)%; ≥10 years: –1.15(0.10)%, –0.71(0.09)%, –0.63(0.10)%; changes were greater with dulaglutide 1.5 mg than insulin glargine (P<0.01) in all DoD subgroups. Treatment by subgroup interaction analysis (ANCOVA) showed a treatment effect (P<0.001) but no effect of DoD on HbA_{1c} change from baseline. More dulaglutide 1.5 mg- than insulin glargine-treated patients achieved HbA_{1c} <7% (P<0.05) in all DoD

subgroups. Dulaglutide reduced, while insulin glargine increased, bodyweight (P<0.01, both dulaglutide doses versus glargine) in all DoD subgroups. For each treatment arm (dulaglutide 1.5 mg, dulaglutide 0.75 mg and insulin glargine) total hypoglycaemia rates (events/patient/year) were: DoD <5 years: 3.27, 4.59, 5.81; ≥5–<10 years: 4.87, 3.59, 8.98; >10 years: 6.68, 5.92, 7.99. **Conclusion:** In AWARD-2, irrespective of DoD, treatment with dulaglutide was effective in improving HbA_{1c} and weight without increased risk of hypoglycaemia compared with insulin glargine. ■

P14

Physician-reported use of glucagon-like peptide-1 receptor agonists (GLP-1 RAs) in patients with type 2 diabetes (T2D) in the UK

Submitting author: ***Adetunji O***, *Eli Lilly and Company, Hampshire*

Background: GLP-1 RAs have been used to treat patients with T2D for almost a decade, and new treatments in this class have recently been introduced. **Aims:** To examine self-reported practice patterns of physicians who prescribe GLP-1 RAs in the UK. **Methods:** In all, 670 physicians (226 diabetes specialists; 444 general practice physicians [GPs]) completed a survey in September/October 2014. **Results:** On average, physicians saw 86 patients with T2D per month (specialists 134; GPs 61). Almost all physicians prescribed GLP-1 RAs (95.4% total sample; 99.1% specialists; 93.5% GPs), and reported writing or authorising an average of 9 new GLP-1 RA prescriptions per month (16.8 specialists; 4.8 GPs). Physicians most commonly reported patients whose glucose levels are not adequately controlled with oral medications (85.9% of physicians) and obese/overweight patients (83.7%) as the types of patients most frequently prescribed a GLP-1 RA. Obese/overweight patients (listed by 92.7%), patients at high risk for hypoglycaemia (53.3%), younger patients (25.7%), and recently diagnosed patients (17.8%) were considered the types of patients that receive the greatest benefit from GLP-1 RAs. The majority of physicians (76.6% total sample; 70.8% specialists; 79.5% GPs) reported no HbA_{1c} cut-off above which they would not prescribe a GLP-1 RA. Almost all diabetes specialists (99.1%) believed they had sufficient knowledge to prescribe a GLP-1 RA, compared with 76.1% of GPs. **Conclusion:** Use of GLP-1 RAs for treatment of T2D in the UK is widespread. However, almost a quarter of GPs report that they still do not have enough knowledge to prescribe these medications. ■

P15

Achieving the nine care processes for people with diabetes and serious mental illness comorbidity – an educational intervention for care coordinators

Submitting author: ***Koelmel A***, *Lewisham and Greenwich NHS Trust, London*

Background: There are no nationally audited data to show whether the uptake of the nine diabetes care processes in people with diabetes and severe mental illness (SMI) is worse than for people without SMI, although anecdotal and locally audited evidence from primary care suggests this to be the case. The project considered people with SMI with an allocated care coordinator living in the community – i.e. not residential accommodation or hospital. **Aims:** To identify whether a brief diabetes educational intervention for mental healthcare coordinators improved access for people with schizophrenia and diabetes to the nine essential care processes for diabetes and improved blood pressure control, glycaemic control and control of blood lipids. **Methods:** A cohort of care coordinators who care for adults with SMI living at home was identified. Search parameters identified by Lewisham CCG's informatics department allowed local identification of the number of people achieving uptake of the nine care processes through interrogation of practice medical information systems. **Results and conclusion:** An increase in the achievement of seven of the nine care processes in this client group was demonstrated. The proportion of people meeting outcomes for targets for blood pressure (≤140/80 mmHg), HbA_{1c} (≤64 mmol/mol) and cholesterol (≤5.00 mmol/L) also improved. Additionally blood pressure targets of <150/90 mmHg improved by 6% and HbA_{1c} <75 mmol/mol improved by 11%. This project has highlighted that diabetes services need to be developed in order to accommodate this client group to reduce incidence and progression of complications with benefit to patients and the overall health economy. ■

P16

Challenges faced by UK physicians when discussing the type 2 diabetes diagnosis with patients: Insights from a cross-national study (IntroDia™)

Submitting author: ***Down S***, *Somerset Partnership NHS Foundation Trust, Somerset*

Background: The IntroDia™ survey of ~17 000 type 2 diabetes patients and physicians in 26 countries globally is investigating early physician–patient communication and its potential consequences. Here we present analysis of UK physicians' responses. **Methods:** Physicians completed an online survey that included assessment of physician–patient communication at diagnosis (including 12 potential challenges) and physician empathy (Jefferson Scale of Physician Empathy). **Results:** In all, 502 UK GPs responded: median of 60 (range 15–480) type 2 diabetes patients seen per month. Most (88.4%) agreed that initial conversations with patients at diagnosis of type 2 diabetes affect their disease acceptance and treatment adherence. Of the potential challenges during initial conversations, 85.9% of physicians had insufficient time in at least a few conversations; 99.6% wanted tools/support for these conversations. The challenges reported by physicians were grouped into two factors: Discouraged with Patients at Diagnosis (DPD, eight challenges; α=0.85), and Frustrated with Situation at Diagnosis (FSD, four challenges; α=0.69). Multiple regression showed a negative relationship between physician empathy and challenges overall (all 12 items; β=–0.261) as well as DPD (β=–0.210) and FSD (β=–0.266) (all P<0.001), suggesting that higher empathy may result in fewer challenges. **Conclusion:** Most UK physicians agreed that diagnosis conversations with type 2 diabetes patients are important but challenging, and most would like tools/support for these conversations. Higher levels of physician empathy were associated with less discouragement/frustration during these conversations. These insights may help develop tools and support to improve the quality of care in type 2 diabetes. ■

P17

CCG-wide successful provision and uptake of structured education through PREDICT and CODEM diabetes courses

Submitting author: ***De P***, *City Hospital, Birmingham*

Introduction: As the majority of type 2 diabetes (T2D) is being managed in the community, it is imperative that all community practitioners (including GPs/GPVTS trainees, nurses, pharmacists and HCAs) have a good working knowledge and background of T2D treatment including insulin use. Effective and practical, accredited diabetes courses in our local CCG tailored to needs of healthcare professionals have been lacking. **Aims:** To cater to this unmet need, we therefore devised two new multi-professional, CCG-approved, RCGP-accredited T2D courses: CODEM – Confidence in Diabetes Evaluation and Management (half day) and PREDICT – Practical Excellence in Diabetes Core Management (1.5 days practical, hands-on course on insulin and GLP-1 therapy, with pre-course assessment and refresher). **Results:** CODEM – has been attended by 320 candidates since January 2015 across five CCGs in Sandwell, Cross City, South Birmingham, Walsall and Wolverhampton with very encouraging feedback. Very popular with comments "excellent for primary care" and "gauged at correct level of audience". PREDICT – 170 candidates have attended this course run in Sandwell, Cross City and South Birmingham CCGs since August 2014 with excellent feedback. Comments: "best course so far" and "have already initiated 8 patients on insulin in the last 6 weeks". **Conclusion:** Both courses are constantly being improved following evaluation and feedback. We hope to continue on this successful journey and further increase uptake across wider CCG groups to include more trainee GPs across the Deanery. The aim will be to provide consistent and equitable diabetes care across the CCG, leading to improved patient outcomes and reduced NHS costs associated with unwarranted hospital admissions and referrals. ■

P18

Smethwick Community Diabetes Pathfinder Project to Diabetes Community Care Extension (DiCE) – a journey in transformation of community diabetes care

Submitting author: ***De P***, *City Hospital, Birmingham*

Background and aims: To proactively address management of a growing diabetic population in Sandwell and West Birmingham CCG, we redesigned the existing Pathfinder model to DiCE, aiming to upskill/empower and improve capacity and management skills within primary care through joint consultations and education. **Methods:** In the "Smethwick Pathfinder" project, we provided joint diabetes clinics within GP practices every 2–3 months (HbA_{1c} >69 mmol/mol), for a one-off advice and management plan by the consultant and diabetes specialist nurse. The essence of this project was retained with the implementation of DiCE (1 April 2014). In all, 111 CCG GP practices (500 000 population) now have access to clinical support of DiCE. **Results:** Smethwick Pathfinder project (2010–14): Improved staff (95%) and patient (97%) satisfaction survey results; 50–62% HbA_{1c} reduction. Cost savings from hospital discharge – 52% (85/164) patients in 2012. Increased uptake of structured education – 300 patients attended X-PERT (January 2012 to December 2013). Reductions in hospitalisations from ketoacidosis (2011: 11; 2014: 5) and amputations (2011: 9; 2013: 3). DiCE (April 2014 to May 2015): Initial results: data from 53 practices – 3060 patients have benefitted from the DiCE service; 595 fewer outpatient appointments made; 25/53 practices (~50%) have seen a decrease in their outpatient activity. Thirty-one practices reported positive engagement with their respective DiCE teams and 22 practices have reported mixed feedback. Both quantitative and qualitative data collection is ongoing. **Conclusion:** Our DiCE model has been praised (won a National QiC award 2014) for its simplicity and effectiveness and can be adapted by any CCG. Our vision is that closer working with every GP practice will become a norm and a great step towards providing first-class care for every diabetes patient. ■

P19

On the door step: Improving diabetes and cardiovascular disease outcomes in the South Asian population of Bolton

Submitting author: ***Bromley L***, *Mandalay Medical Centre, Lancashire*

Background: Health Equity Audit Bolton revealed areas with low retinal screening uptake, high unplanned admissions, and 19%/27% diabetes prevalence in South Asian Indian/Pakistani communities. **Aims:** To better engage the South Asian and BME community enabling better self-management of diabetes and CVD risk, thereby reducing long-term complications. **Methods:** We worked with the local council of mosques and imams to deliver combined screening, education and awareness sessions in two areas of high deprivation to engage hard-to-reach populations. Real-time near-patient HbA_{1c}, cholesterol, BP, waist measurement and smoking status stratified people into: (1) low risk of diabetes/CVD; (2) high risk (prediabetes/CVD); (3) higher risk (new diagnosis of diabetes/CVD on the day); (4) pre-existing diabetes/CVD. We discussed risk and delivered a targeted brief educational intervention supported by the local council of mosques and imams, we measured patient experience (questionnaire) and we identified community champions. **Results:** Two sessions were delivered; 104 people were screened, of which 20 were known to have diabetes. Mean age was 47.3 years (18–88); 62% were males; 7% were smokers; there were four new diagnoses of diabetes; 43 were at high risk of CVD, of whom 37 had pre-diabetes (HbA_{1c} 38–48 mmol/mol) and 16 were at high risk of diabetes (HbA_{1c} >42 mmol/mol). All received targeted educational intervention. Forty-two per cent subsequently contacted their GP. Nineteen potential champions were identified. There were excellent satisfaction scores (9.5/10). **Conclusion:** Partnership working with the local council of mosques and imams proved very successful in identifying risk, raising awareness, engagement (19 potential champions) and challenging healthcare beliefs in a hard-to-reach population and has led to Diabetes UK and Royal Bolton NHS FT joining the partnership. ■

P20

What are we doing to prevent progression to diabetes?

Submitting author: ***Goodwin D***, *Wand Medical Centre, Shropshire*

Background: We have a practice of approximately 6500 patients from a wide range of ethnic and cultural backgrounds in an economically deprived area. There is a large number of patients diagnosed with diabetes already, but although there has been an increase in type 2 diabetes, most growth has been in pre-diabetes. Other papers have predicted a third of those with pre-diabetes will progress to type 2 diabetes within 3 years. **Aims:** To understand the progression to diabetes from pre-diabetes over time and predict the workload for the diabetes clinic. **Methods:** Longitudinal audits of diagnoses of pre-diabetes and type 2 diabetes were conducted using HbA_{1c} in mmol/mol for comparison. Type 1 and gestational diabetes were excluded from audit results. **Results:** There was an increase over 5 years in both numbers diagnosed with pre-diabetes and type 2 diabetes, but disproportionate growth in pre-diabetes. Patients appear to be spending longer in the pre-diabetes HbA_{1c} range than the predicted 3 years. Some with previous pre-diabetes range HbA_{1c} have reverted to normal range values. Predicting at least one contact a year for pre-diabetes and at least four contacts a year for type 2 diabetes, then it is possible to predict the minimum number of diabetes appointments these patients will need. **Conclusion:** We seem to be doing something to slow the predicted progression to type 2 diabetes from pre-diabetes. There are several factors that might have led to that. Using numbers and minimum specifications it is possible to predict a minimum provision of contacts although comorbidities have an impact on such modelling. ■

P21

Analysis of empagliflozin versus glimepiride by Quality and Outcomes Framework targets: *Post hoc* analysis of a head-to-head study

Submitting author: ***Brice R***, *Whitstable Medical Practice, Kent*

Aims: To evaluate empagliflozin versus glimepiride by relevant Quality and Outcomes Framework (QOF) targets in patients with type 2 diabetes. **Methods:** In a randomised, Phase III trial, patients received empagliflozin 25 mg (n=765) or glimepiride 1–4 mg (n=780) as add-on to metformin for 104 weeks. *Post hoc*, we analysed proportions of patients with baseline HbA_{1c} ≥9.0%, ≥8.0% and ≥7.5% who reached HbA_{1c} <9.0%, <8.0% and <7.5% at week 104, respectively; with baseline SBP ≥140 and/or DBP ≥80 mmHg who reached SBP <140 and DBP <80 mmHg at week 104; and with baseline total cholesterol ≥5 mmol/L who reached <5 mmol/L at week 104. Non-completers or patients who received rescue medication before week 104 were considered failures for HbA_{1c} and BP analyses. **Results:** Of patients with baseline HbA_{1c} ≥9.0%, 50/103 (48.5%) and 20/95 (21.1%) reached HbA_{1c} <9.0% with empagliflozin and glimepiride, respectively (P<0.001 for odds ratio [OR] versus glimepiride), 166/313 (53.0%) and 111/315 (35.2%) with baseline HbA_{1c} ≥8.0% reached HbA_{1c} <8.0%, respectively (P<0.001), and 236/515 (45.8%) and 184/499 (36.9%) with baseline HbA_{1c} ≥7.5%, reached HbA_{1c} <7.5%, respectively (P=0.006). Of patients with baseline SBP ≥140 and/or DBP ≥80 mmHg, 97/433 (22.4%) and 51/453 (11.3%) reached SBP <140 and DBP <80 mmHg with empagliflozin and glimepiride, respectively (P<0.001 for OR versus glimepiride). Of patients with baseline total cholesterol ≥5 mmol/L, 40/222 (18.0%) and 70/215 (32.6%) reached <5 mmol/L, respectively. **Conclusion:** Greater proportions of patients with type 2 diabetes reached QOF targets for HbA_{1c} and BP with empagliflozin versus glimepiride as add-on to metformin. ■

P22

Empagliflozin as monotherapy or add-on therapy in South Asian patients with

type 2 diabetes: *Post hoc* analysis of pooled data from four Phase III trials

Submitting author: ***Spencer W***, *Boehringer Ingelheim Ltd, West Berkshire*

Aim: To evaluate efficacy and safety of empagliflozin versus placebo in South Asian patients with type 2 diabetes. **Methods:** In a *post hoc* analysis of data pooled from four randomised Phase III trials, changes from baseline in HbA_{1c} and weight at week 24 were evaluated in the subgroup of South Asian patients who received placebo (*n*=113), empagliflozin 10 mg (*n*=111) or empagliflozin 25 mg (*n*=108) as monotherapy or add-on therapy. **Results:** Baseline mean (SD) HbA_{1c} was 8.11(0.86)%, 8.25(0.92)% and 8.27(1.04)%, and weight was 67.1 (10.7) kg, 67.2 (10.3) kg and 66.9 (10.6) kg for placebo, empagliflozin 10 mg and 25 mg, respectively. Adjusted mean (SE) change from baseline in HbA_{1c} at week 24 was 0.05(0.08)% with placebo versus −0.57(0.09)% with empagliflozin 10 mg (adjusted mean [95% CI] difference: −0.62% [−0.86 to −0.38]; *P*<0.001) and −0.79(0.09)% with empagliflozin 25 mg (difference: −0.85% [−1.08 to −0.61]; *P*<0.001). Adjusted mean (SE) change from baseline in weight was 0.3 (0.2) kg with placebo versus −1.4 (0.2) kg with empagliflozin 10 mg (difference: −1.7 kg [−2.3 to −1.2]; *P*<0.001) and −1.0 (0.2) kg with empagliflozin 25 mg (difference: −1.3 kg [−1.8 to −0.7]; *P*<0.001). Confirmed hypoglycaemic adverse events (glucose ≤3.9 mmol/L and/or requiring assistance) were reported in three (2.7%), five (4.5%) and one (0.9%) patients receiving placebo, empagliflozin 10 mg and 25 mg, respectively; none required assistance. **Conclusion:** In a *post hoc* analysis of South Asian patients from pooled Phase III trials, empagliflozin significantly reduced HbA_{1c} and weight versus placebo, with low risk of hypoglycaemia. ■

P23

Efficacy and safety of empagliflozin compared with glimepiride in South Asian patients with type 2 diabetes in a head-to-head study

Submitting author: ***Hassan SW***, *Eli Lilly and Company, Hampshire*

Aim: To evaluate efficacy and safety of empagliflozin versus glimepiride in South Asian patients with type 2 diabetes. **Methods:** In the subgroup of South Asian patients who received empagliflozin 25 mg (*n*=72) or glimepiride 1–4 mg (*n*=94) as add-on to metformin for 104 weeks in a Phase III randomised trial, changes from baseline in HbA_{1c} and body weight at week 104 were evaluated. **Results:** In South Asian patients, mean (SD) baseline HbA_{1c} was 8.17(0.78)% for empagliflozin and 8.27(0.97)% for glimepiride. Adjusted mean (SE) change from baseline in HbA_{1c} at week 104 was −0.45(0.10)% with empagliflozin and −0.52(0.09)% with glimepiride (adjusted mean [95% CI] difference: 0.07% [−0.20 to 0.35]). Mean (SD) baseline weight was 69.3 (10.8) kg and 69.7 (12.5) kg, respectively. Adjusted mean (SE) change from baseline in weight at week 104 was −1.8 (0.3) kg with empagliflozin and 0.6 (0.3) kg with glimepiride (adjusted mean [95% CI] difference: −2.4 kg [−3.2 to −1.5]). Confirmed hypoglycaemic adverse events (glucose ≤3.9 mmol/L and/or requiring assistance) were reported in three (4.2%) patients receiving empagliflozin and 19 (20.2%) receiving glimepiride; none required assistance. **Conclusion:** In South Asian patients with type 2 diabetes, empagliflozin led to similar reductions in HbA_{1c} compared with glimepiride, but with a smaller proportion of patients experiencing hypoglycaemia and significant reductions in body weight compared with glimepiride. ■

P24

Glycaemic control and hypoglycaemia with insulin glargine 300 units/mL (Gla-300) vs glargine 100 units/mL (Gla-100) in type 2 diabetes (T2DM) in a patient-level meta-analysis of 1-year Phase 3a EDITION studies

Submitting author: ***Baradez C***, *Sanofi, Surrey*

Aims: EDITION 1, 2 and 3 assessed new Gla-300 versus Gla-100 in T2DM. **Methods:** A patient-level meta-analysis of 1-year data was conducted. **Results:** Glycaemic control was sustained in both groups, with more sustained HbA_{1c} reduction for Gla-300 at 1 year (LS mean difference between groups in HbA_{1c} change from baseline −0.10 [−0.18 to −0.02]; *P*=0.0174). There was a reduced risk of confirmed (≤70 mg/dL) or severe hypoglycaemia at any time (24-hour) and during the night versus Gla-100. Weight gain was less with Gla-300 versus Gla-100. The slight insulin dose difference at 6 months remained at 1 year. **Conclusion:** Gla-300 allows better up-titration of insulin dose for more sustained glycaemic control without increasing the risk of any-time and nocturnal hypoglycaemia or weight gain. **Declaration:** This study was sponsored by Sanofi and was presented at ADA, 5–9 June 2015, Boston, USA. ■

P25

Switching from twice-daily basal insulin to once-daily new insulin glargine 300 units/mL (Gla-300): An analysis in people with T2DM (EDITION 1 and 2)

Submitting author: ***Baradez C***, *Sanofi, Surrey*

Background and aims: In EDITION 1 (basal + mealtime insulin) and EDITION 2 (basal + OADs), people with T2DM receiving new insulin glargine 300 units/mL (Gla-300) achieved comparable glycaemic control with less hypoglycaemia versus glargine 100 units/mL (Gla-100). This *post hoc* analysis explored the effect of switching from twice-daily basal insulin to once-daily Gla-300 or Gla-100. **Results:** At randomisation, 16.9% and 19.8% of people were receiving twice-daily basal insulin in EDITION 1 and EDITION 2, respectively. In these subgroups, glycaemic control was comparable over 6 months in people who switched to Gla-300 or Gla-100 (LS mean difference in HbA_{1c} change from baseline to month 6, −0.01 [95% CI, −0.27 to 0.24] % in EDITION 1 and 0.16 [−0.25 to 0.57] % in EDITION 2). As in the overall study cohorts, Gla-300 dose was higher than Gla-100 at month 6 in this analysis. Participants switching from twice- to once-daily basal insulin in EDITION 1 had lower risk of confirmed (≤70 mg/dL) or severe hypoglycaemia with Gla-300 versus Gla-100 at night, but not at any time (24-hour; possibly influenced by mealtime insulin use), while in EDITION 2, the risk was reduced both at night and at any time (24-hour). **Conclusion:** As seen overall in EDITION 1 and 2, people with T2DM switching from twice-daily basal insulin to once-daily Gla-300 achieved comparable glycaemic control with less hypoglycaemia versus those switching to Gla-100. **Declaration:** This study was sponsored by Sanofi and was presented at ADA, 5–9 June 2015, Boston, USA. ■

P26

Age, BMI and diabetes duration: Effect on glycaemic control and hypoglycaemia with insulin glargine 300 units/mL in type 2 diabetes (T2DM)

Submitting author: ***Baradez C***, *Sanofi, Surrey*

Background and aim: The EDITION 1, 2 and 3 clinical trials showed that insulin glargine 300 units/mL (Gla-300) provided comparable glycaemic control to glargine 100 units/mL (Gla-100) and less hypoglycaemia in people with T2DM, over 6 months of treatment. **Methods:** The effects of Gla-300 versus Gla-100 on HbA_{1c} reduction and hypoglycaemia were investigated in different subgroups (age [<65 and ≥65 years], BMI [<30 and ≥30 kg/m^2] and diabetes duration [<10 and ≥10 years]) in a *post hoc* patient-level meta-analysis of EDITION 1, 2 and 3. **Results:** HbA_{1c} reduction remained comparable between the Gla-300 and Gla-100 arms, regardless of age, BMI or disease duration. The lower risk of confirmed (≤70 mg/dL) or severe hypoglycaemia with Gla-300 versus Gla-100 was not affected by age or BMI. For the diabetes duration subgroup analysis, no significant heterogeneity of treatment effect was seen for nocturnal hypoglycaemia, whereas the benefit of lower risk of confirmed (≤70 mg/dL) or severe hypoglycaemia at any time of day with Gla-300 was seen in those with longer duration of diabetes. **Conclusion:** Comparable glycaemic control was observed with Gla-300 and Gla-100, and less nocturnal hypoglycaemia was seen for Gla-300 regardless of the subgroup. **Declaration:** This study was sponsored by Sanofi and was presented at ADA, 5–9 June 2015, Boston, USA. ■

P27

Older people with type 2 diabetes: Glycaemic control and hypoglycaemia risk with new insulin glargine 300 units/mL

Submitting author: ***Baradez C***, *Sanofi, Surrey*

Background: In people with T2DM, a patient-level meta-analysis of EDITION 1, 2 and 3 has shown Gla-300 provides comparable glycaemic control with less hypoglycaemia over 6 months versus glargine 100 units/mL (Gla-100). In this *post hoc* analysis, we investigated these outcomes, as well as an extended (22:00 to pre-breakfast SMPG) and clinically defined (00:00–05:59) window of nocturnal hypoglycaemia and composite endpoints, in those aged ≥65 years (n=659). **Results:** Gla-300 showed comparable glycaemic control to Gla-100 (LS mean [95% CI] difference in HbA_{1c} change from baseline to month 6: 0.00 [−0.14 to 0.15] %). There was less confirmed (≤70 mg/dL) or severe hypoglycaemia during the night irrespective of the nocturnal window analysed and a trend towards less any-time (24-hour) events for Gla-300 versus Gla-100. More Gla-300-treated participants reached HbA_{1c} targets or had HbA_{1c} reduction ≥0.5% without confirmed (≤70 mg/dL) or severe nocturnal hypoglycaemia. Those on Gla-300 were 55–70% more likely to achieve HbA_{1c} <7% with no nocturnal hypoglycaemia (significant using both windows). **Conclusion:** In summary, the comparable glycaemic control plus hypoglycaemia benefit of Gla-300 is confirmed in a potentially more vulnerable subgroup aged ≥65 years, with more people reaching HbA_{1c} targets without hypoglycaemia on Gla-300 versus Gla-100. The nocturnal hypoglycaemia benefit of Gla-300 was also confirmed when an extended window (22:00 to pre-breakfast SMPG) was considered. **Declaration:** This study was sponsored by Sanofi and was presented at ADA, 5–9 June 2015, Boston, USA. ■

P28

Advancing basal insulin glargine with prandial lixisenatide OD vs insulin glulisine OD or TID in type 2 diabetes: The GetGoal-Duo2 evidence-based trial (NCT01768559)

Submitting author: ***Baradez C***, *Sanofi, Surrey*

Background and aims: To provide evidence on how to advance basal insulin (BI). **Methods:** Treatment options were explored in poorly controlled, basal insulin-treated (≥6 months ± 1–3 OADs), predominantly obese adults with type 2 diabetes mellitus (T2DM) randomised to lixisenatide 20 µg OD (LIXI), insulin glulisine OD (GLU-1) or GLU TID (GLU-3), all added to insulin glargine (IG) ± metformin, if HbA_{1c} remained ≥7–≤9% after a 12-week IG optimisation run-in period after stopping other OADs. Co-primary endpoints at 26 weeks were (1) non-inferiority (95% CI upper bound <0.4%) in HbA_{1c} reduction with LIXI versus GLU-1 and (2) for LIXI versus GLU-3, either non-inferiority in HbA_{1c} reduction (2a) OR superiority (one-sided α=0.025) in body weight change (2b). Fasting plasma glucose, postprandial glucose, insulin glargine dose, adverse events and hypoglycaemia were assessed. Each arm randomised 298 patients (T2DM duration 12 years, BI duration 3 years, weight 89 kg). **Results:** All co-primary endpoints were met as LIXI was non-inferior to GLU-1 and GLU-3 for HbA_{1c} reductions and statistically superior to both for body weight loss. Documented hypoglycaemia was numerically and significantly lower with LIXI than with GLU-1 and GLU-3, respectively. **Conclusion:** BI plus LIXI may become a preferred option to advance BI, attaining meaningful glycaemic targets with less hypoglycaemia and without negative impact on weight versus prandial insulin as Basal Plus or Basal Bolus for uncontrolled, BI-treated T2DM. **Declaration:** Study sponsored by Sanofi and presented at EASD, 15–18 September 2015, Stockholm, Sweden. ■

P29

Delayed presentation of type 1 diabetes to hospital

Submitting author: ***Kear CL***, *Queens Medical Centre, East Midlands*

Background: Type 1 diabetes (T1DM) is one of the commonest chronic childhood diseases. Untreated, T1DM can result in life-threatening diabetic ketoacidosis (DKA). Prompt recognition, diagnosis and treatment are imperative. Symptoms of diabetes include polyuria, polydipsia, weight loss and lethargy. Upon recognition of any of these, guidance states GPs should perform immediate fingerprick blood glucose and, if raised, refer the same day to a paediatric diabetes team. The "4 T's" campaign aimed to increase awareness of signs/symptoms of diabetes. Despite this, a significant proportion of cases go unrecognised and/or are not managed appropriately. **Aims/objectives:** This study aimed to look at possible reasons for this and further raise awareness. **Methods:** A retrospective case series analysis was undertaken of patients who presented to Nottingham Children's Hospital with a delayed diagnosis of T1DM (2012–15). **Results:** Eleven cases (two female; age range, 1.5–15 years) were identified where patients presented to primary care with signs/symptoms of T1DM. Only 1/11 had a blood glucose checked but this was sent to the laboratory, which was not acted upon. The mean delay between presentation to GP and hospital was 5.5 days (range, 12 hours to 21 days). Fifty per cent presented to hospital in DKA, three of whom nearly died and have significant long-term sequelae. **Conclusion:** Prompt recognition and referral of children with suspected diabetes is vital to prevent life-threatening DKA. Reasons for delayed presentations include inadequate history taking, failure to recognise signs and symptoms of diabetes, failure to perform a fingerprick blood glucose test and lack of appropriate action when an abnormal result is detected. ■

P30

Barriers facing people with obesity and type 2 diabetes in achieving and maintaining weight loss: A systematic review

Submitting author: ***Lawal M***, *University of West London, Berkshire*

Background: The health consequences of obesity can be compounded by any other co-existing medical condition such as diabetes and this requires effective management. Regardless of the health concerns and availability of guidelines to tackle obesity, encouraging people who are obese or overweight to be physically active remains a challenge. **Objective:** The aim of this review was to examine the evidence relating to barriers preventing people with obesity or overweight and type 2 diabetes from participating in physical activities as a means of controlling their weight. **Methods:** This secondary research used a systematic literature review of both electronic and manual searches of bibliographies to examine the empirical evidence relating to barriers to weight control. A search was completed from inception to June 2015 using multiple electronic databases: CINAHL, Medline, Embase, Ebscohost, Pubmed, PsycInfo, Ovid and the Cochrane database of systematic reviews. **Results:** A total of 21 international research studies including the UK met the inclusion criteria. The findings of this study identified various individual and environmental barriers such as ill health, having a domestic helper and extreme weather conditions. Motivators for weight control include perceptions and feeling about weight, willingness to prevent deterioration, eagerness to promote independence among the elderly, encouragement and enjoyment derived from physical exercise. Also, encouraging patients to change their lifestyles requires promoting autonomy, providing social and culturally acceptable facilities, and avoiding blaming or stereotyping. **Conclusion:** This systematic review suggests that improving weight reduction requires a sustained action from the individuals, families, local agencies, community, industry and the Government. ■