

*Meeting report from the*  
**3<sup>rd</sup> National Conference of  
the Primary Care Diabetes Society**

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**PCDS**  
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**Diabetes  
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**Achievements, challenges  
and controversies in primary  
diabetes care**

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## Primary care: A success story



Opening the conference, Kamlesh Khunti (Professor of Primary Care Diabetes and Vascular Medicine at the University of Leicester) reviewed recent evidence of improved outcomes in diabetes managed in primary care.

Reports show satisfied patients and value-for-money. 'Primary care is the cheapest health care in terms of providing flexible and quality care,' Kamlesh said.

Furthermore, Campbell and colleagues published data in the July 2007 issue

of the *New England Journal of Medicine* demonstrating that the increase in the rate of improvement of mean practice quality score from 2003 to 2005 (after QOF was introduced) was significantly greater than from 1998 to 2003 ( $P < 0.001$ ).

'It is time for celebration,' Kamlesh declared. 'We have proof that we have made a difference and, in my opinion, deserve a good pat on the back! However, we must not get complacent by forgetting that we can get even better.'

## Saving feet



The incidence of ulceration in diabetes has been estimated to be up to 25% and the economic impact quickly adds up when one considers that the cost of treating one ulcer in one individual is approximately £3600. Furthermore, over the 5 years after the first event, in some parts of the UK it is been estimated that ulcers recur in up to 70% of individuals (at Neil's diabetes centre, this has been reduced to 15%). 'If you prevent the first ulcer, you've prevented the second ulcer,' Neil said. 'But, most importantly, you've prevented an amputation.'

People with diabetic foot ulcers often do not report ulceration due to, for example, poor eyesight and an underestimation of their importance. To address such issues it is important for primary care to identify those most at risk and subsequently provide relevant education and to refer when necessary.

When screening for sensory neuropathy the clinician should provide adequate explanation of what is being done and why, a demonstration of each procedure should be given: when using, for example, the 10g monofilament, it is important to check that the patient sees the demonstration, but closes his or her eyes during the actual testing. 'Test the areas most prone the ulceration: the plantar surfaces of the first, third and

fifth metatarsal heads and the top of the big toe,' Neil advised. Autonomic and motor functions should both be assessed in a neurological examination.

Neuropathy, absent pulses, deformity or skin changes (such as callus, corns or fissuring) are all indications that an individual is at moderate risk of ulceration. Management should be conducted by a foot protection team and ideally involve a foot inspection at 3–6 month intervals. Each visit should include a review of the individual's need for vascular assessment, a footwear evaluation and foot care education. Special arrangements should be in place to enable access to the foot protection team for any individuals with disabilities or reduced mobility.

It is important that the foot protection team are made aware of any individual at high risk. Indications of high risk include neuropathy or absent pulses plus deformity or skin changes. This group also includes anyone with a history of foot ulceration or lower limb amputation.

When an ulcer is detected an urgent referral (within 24 hours) to a multidisciplinary foot care team is needed for specialist intervention. 'Refer on even the slightest hint of an ulcer,' Neil said. 'And remember: if it looks ischaemic, it probably is.'

## Structured education: What works?

**T**he success of the Diabetes Control and Complications Trial precipitated the acceptance of the multiple insulin injection therapy regimen for type 1 diabetes,' began Sue Craddock (Consultant Nurse in Diabetes, Portsmouth). 'But, initially, we still weren't able to demonstrate the same outcomes in clinical practice. Then we realised that the DCCT also used intensive education and support.'

NICE describes four key criteria for education programmes. They should be structured with a written curriculum, involve trained educators, be quality assured, and audited. 'We wouldn't give people with diabetes a drug that hadn't been tested to exacting standards, but we do with education. We need to follow the evidence and such guidance as that from NICE,' Sue said.

Key programmes in the field of structured education in diabetes are DAFNE (Dose Adjustment For Normal Eating) for type 1 diabetes, and X-Pert and DESMOND

(Diabetes Education and Self-Management for Ongoing and Newly Diagnosed) for type 2 diabetes. These have been proven to improve glycaemic control and other CVD risk factors, improve quality of life and increase patient empowerment.

From data to be presented at the Diabetes UK 2008 conference, Sue showed that programmes delivered face-to-face tend to elicit larger effects: HbA<sub>1c</sub> was reduced by 0.04% (95% CI: 0.01–0.08) for every additional hour of contact time.

'To get our patients to behave differently, we as healthcare professionals have to behave differently,' Sue told delegates. The role of facilitating this change has been taken on by the Type 1 Education Network, which has developed a generic, customisable philosophy for diabetes education courses, a support infrastructure for centres delivering new programmes and quality improvement tools. Regional workshops are organised to facilitate these.



## Vascular screening

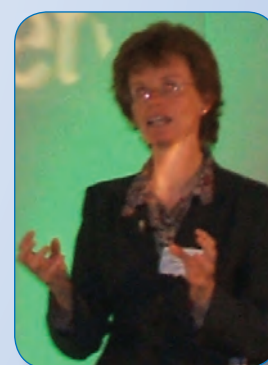
**S**everal groups have highlighted the need for a co-ordinated vascular disease control programme that integrates prevention, screening, early detection and disease management for coronary heart disease, stroke, transient ischaemic attacks, peripheral arterial disease, type 2 diabetes and chronic kidney disease. For type 2 diabetes, the importance of vascular screening is underlined by a finding that 50% of individuals already have one or more complications at diagnosis.

Melanie Davies (Professor of Diabetes Medicine, Leicester) discussed a vascular screening approach that looks at overall vascular risk in individuals and is proactive in reducing inequalities in CVD risk identification and management. She argued that as everyone is at some degree of risk of CVD, information and support to reduce risk

should be widely available and accessible to all.

While healthcare professionals may have the enthusiasm and skills to perform vascular screening, innovative ways of engaging the public still need to be designed and implemented. In this, self-assessment may be a useful strategy. It could increase individuals' understanding of how their lifestyles impact upon their quality of life and empower them to adopt healthier lifestyles.

To aid screening in clinical practice, Melanie's group has written *The Handbook for Vascular Risk Assessment, Risk Reduction and Risk Management*. 'It is not meant to be a guideline,' Melanie said. 'It says: "If you are doing this, here's a good way of doing it." We intend it to be used as a practical toolkit to assist healthcare professionals, not as something that tells them what to do.'



## Type 1 diabetes: Life, insulin and everything



Delegates participating in the workshop.

**B**rian Karet (GPSI in diabetes, Bradford) and Bev McDermott (DSN, Bradford) looked at some of the issues community diabetes care teams should consider to optimise care in those with type 1 diabetes. 'We need to actively encourage individuals to make informed choices and self manage,' Brian said, referring to the NSF for diabetes.

From the patient's perspective, everyday-life tends to deprioritise diabetes management and negatively impact upon coping mechanisms. Meanwhile, a healthcare professional may be pushing for optimal HbA<sub>1c</sub>, increased physical activity and improvements in CV risk

factors – all of which may be in opposition to the patient's priorities. 'Being glucocentric may mean that we miss a lot of problems in their lives,' Brian explained. 'We need to work to *their* agenda, not ours.'

'Most people with diabetes just want to get on with their life, be like everyone else and avoid hypos,' Bev said. 'Injections and appointments should be kept to a minimum, but a healthcare professional should be there when needed.'

'People with type 1 diabetes need to know how to control their diabetes, not to have diabetes control them,' Brian concluded.

## Carbohydrates: A balancing act



**P**eople with diabetes often become frustrated when they cut sugar from their diet yet still struggle to get their blood glucose levels to target. 'This struggle can be further compounded by the current dietary domination of the GI diet, which, although has many positives, is frequently being translated into 'Eat lots of pasta,' said Francesca Arundel (DSN, Portsmouth).

People with type 2 diabetes have a limited ability to effectively process carbohydrate. Helping them to understand what carbohydrate is and how to moderate intake and use blood glucose monitoring is essential.

Francesca presented practical tools suitable for use by healthcare professionals in primary care to help people with type 2 diabetes understand carbohydrates.

## Insulin in type 2 diabetes



**I**nitiating insulin therapy in type 2 diabetes can be challenging for a variety of reasons. To help matters, Lorraine Avery (Diabetes Medical Liaison, Eli Lilly & Co) discussed *The Insulin Decision Tree*, an electronic insulin advisory algorithm developed to help healthcare professionals ensure individualised care for each of their patients.

This electronic pathway aids clinical decision making by collecting information

regarding an individual's suitability for insulin, patient characteristics, patient wishes and regimens and titration. It can also play a role in reviewing patients previously initiated onto insulin.

Lorraine worked through two case studies and assured delegates of the non-promotional nature of the tool. 'In the absence of evidence, clinical wisdom is a valuable tool,' she said.

## Commissioning and service redesign

The process of commissioning involves a needs assessment followed by the development of a service specification. A contract for the service is then required along with monitoring and review of the service.

The *Diabetes Commissioning Toolkit* was developed to support the commissioning of high-quality services. It was made possible by a unique collaboration led by the Primary Care Diabetes Society in partnership with the NDST, DoH, Diabetes UK, Association of British Clinical Diabetologists, and York and Humber Public Health Observatory.

Azhar Farooqi OBE, (GP, Leicester) described the Leicester experiences of practice-based commissioning. In this model, general practices will do as much as possible in diabetes care facilitation and education. There is a single point for referral with complex care provided by secondary care.

'Data collection can be difficult,' Azhar cautioned. 'But the outcomes are care nearer to patients; fewer people with little or no care; higher levels of quality assurance; more integrated care; and, hopefully, increased cost-effectiveness.'



## Preconception counselling in primary care

The landmark St Vincent Declaration in 1989 called for a reduction in the adverse outcomes of diabetic pregnancy to the level of those without diabetes within 5 years. In the UK (and in many parts of the world), this target was not met. 'I suspect this failure has prompted the formulation of new NICE guidelines on the topic,' said Roger Gadsby, (GP, Nuneaton; Associate Professor, University of Warwick; and member of the NICE committee for diabetes and pregnancy guidelines).

The statistics associated with diabetes and pregnancy could be surprising to some. Perinatal mortality is four times that of the general population and the rate of congenital malformation, associated with suboptimal HbA<sub>1c</sub> at conception, is twice that of the general population. 'Any HbA<sub>1c</sub> nearer 7% reduces the risk,' Roger said. 'Even reducing from 11% to 9% is beneficial.'

The modifiable nature of the causes of these adverse outcomes clearly identifies a need for preconception counselling.

According to a recent CEMACH survey of women who became pregnant, only 38% with type 1 diabetes and 25% of those with type 2 diabetes had had any preconception counselling documented in their notes.

With as many as half of all pregnancies in women with diabetes being unplanned, one essential step would be to include contraception advice as part of routine diabetes care in women of childbearing age, perhaps as part of their annual review.

Raising the profile of the availability of preconception advice in diabetes could also increase the uptake of the service. 'A simple solution could be to mail out a leaflet to all women of childbearing age who have diabetes to ask them to get in touch if they are thinking about getting pregnant,' Roger said.

Important questions still remain unanswered in the issue of pregnancy in diabetes: who should arrange a follow up OGTT and act on the results? Who should give lifestyle advice? It is hoped such issues will be clarified in any forthcoming guidance from NICE.



## Motivational interviewing



**‘D**o we follow what we preach to our patients?’ Mark Davies (Consultant Clinical Psychologist, Belfast) challenged his workshop audience. He proceeded to describe the ‘stages of change model’. This model describes five stages that are involved in making changes such as lifestyle modifications necessary to help manage type 2 diabetes successfully: precontemplation; contemplation; preparation; action; and maintenance.

It is not unusual for individuals to ‘relapse’ many times before ‘progressing’ onto the action and maintenance stages. For example, people who are attempting to give up smoking are known to relapse multiple times before finally giving up and maintaining a non-smoking state.

‘Compliance’ is the traditional approach to *making* patients do what clinicians would like them to do. This approach assumes

that the clinician is in control of the patient’s diabetes. However, this is not the case: the patient is the person who manages the condition almost 100% of the time. Therefore, a change in attitude of clinicians is needed: ‘adherence’ assumes that most of the responsibility lies with the patient, with him or her making any final decisions.

Motivational Interviewing is a consulting style that aims to help people address ambivalence and resistance towards behavioural change. Healthcare professionals spend a lot of their time communicating with patients about making changes to their behaviour (for example smoking, exercise, diet, adherence to medications). Motivational interviewing is an evidence-based, theoretically-driven approach that helps professionals to better understand and enhance motivation in their patients.

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## Hypoglycaemia: The patient’s nightmare



**‘H**ypoglycaemia is the worst thing about having diabetes according to many people with diabetes,’ began Gwen Hall and Debbie Hicks (Diabetes Specialist Nurse in Primary Care, Haslemere; and Diabetes Nurse Consultant, London; respectively). The frequency of hypoglycaemia in early use of insulin in people with type 2 diabetes is roughly similar to that of sulphonylureas. Although generally lower than that experienced by people with type 1 diabetes, it is a hated side-effect of therapy and a leading cause of the reluctance to achieve tight glycaemic control through insulin therapy.

There are many causes of hypoglycaemia, these include administration of too much insulin or sulphonylurea, and inadequate energy intake (especially when coupled with increased physical activity). The severity of hypoglycaemia is classed as

mild if the patient self-treats, as moderate if family/friend-treated, and as severe if hospitalised.

Recurrent hypoglycaemia is known to affect cognitive function, with ability to concentrate, rapid decision making and hand–eye coordination all impaired.

Hypoglycaemia during driving is a particular concern of many; however, it can be relatively easily prevented. The patient must be advised to test their blood glucose levels before setting off on a journey, and during long journeys, regular meals or snacks must be taken (with a supply of fast acting carbohydrate kept in the car all of the time). If hypoglycaemia does occur during driving, it is important that the driver not resume his or her journey until approximately 45 minutes after normal blood glucose levels have been achieved.

## Waist matters: Prevention of CVD and diabetes

The consequences of obesity have been known for at least two millennia: Hippocrates observed that 'sudden death is more common in those who are naturally fat than in the lean.' Yet, despite this, the UK is now in a situation where two-thirds of men and a half of women are now overweight or obese.

Waist circumference is increasingly accepted as an alternative to BMI for assessing diabetes risk. BMI has particular problems when using it to assess high-risk ethnic populations. For example, it is not uncommon for a South Asian to have a higher percentage body fat than a Caucasian of the same BMI. Waist circumference has also been shown to correlate well to CT scans of fat distribution.

The two body shapes described in

clinical practice via waist circumference are android (apple shaped) and gynoid (pear shaped). 'There are variations to these descriptors,' Kamlesh said, 'but in general people are either apples or pears.'

The risk of developing type 2 diabetes increases linearly with waist circumference and it is independently associated with increased age-adjusted risk of CHD, even after adjusting for BMI and other CV risk factors.

While waist circumference is a simple and practical tool that can be used to identify individuals with elevated risk of diabetes and CVD, problems in utilising it to its full potential include healthcare professional resistance and cultural sensitivities. Kamlesh proposed that self assessment would help tackle these.



## Prevention of CVD: How low is too low?

'We have been habitually told that people with type 2 diabetes are at equivalent risk of heart disease as those who have already experienced a myocardial infarction.' This was contested by Naveed Sattar (Professor of Metabolic Medicine, Glasgow): 'Risk at diagnosis of type 2 diabetes is lower,' he said. 'It is 5 years later that I believe the data suggests type 2 diabetes becomes a risk equivalent.'

Reducing CV events such as MI can be achieved by appropriate pharmacotherapy. 'The cholesterol benefits of statins are seen whatever baseline cholesterol is,' Naveed said. 'A greater cholesterol reduction is directly proportional to a relative risk reduction of CV events. So we will see benefits in all patients – but should we be using them in all patients?'

In place of intensifying statin therapy to the point at which the adverse events outweigh the benefits or acceptability to the patient, it is possible to lower CVD

risk factors via the polypharmacy route. For example, ezetimibe can be added to statins to target cholesterol.

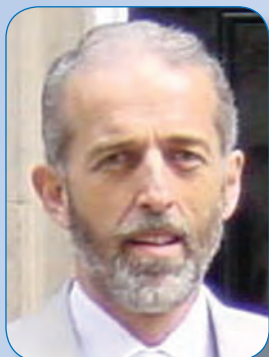
Naveed was less enthused about fibrate therapy: 'I would say that it is not advisable to add a fibrate to a statin. The evidence is patchy.' In the FIELD study fibrates showed numerically more VTE, pancreatitis and increased total mortality.

Aspirin has recently been trialled as an agent for CVD risk reduction. Published data have shown that in those at low risk, over 10 years five CVD events will be prevented while one haemorrhagic stroke and five major bleeds may have been caused by the therapy, making it inappropriate for those not at high CVD risk. Such evidence underlines the need for clinical judgement at the individual case level.

For the management of hypertension, Naveed advocated the use of the NICE 'ACD' algorithm.



## Hot topics



**N**eil Munro (GP, Surrey) reported on the one-year results of the 4-T study. These data suggest that most people with type 2 diabetes are likely to need more than one type of insulin to achieve target glucose levels in the longer term.

Incretin mimetics and DPP-4 inhibitors offer an alternative to insulin initiation in people with type 2 diabetes.

The incretin mimetics have demonstrated significant weight loss benefits and significant reductions in HbA<sub>1c</sub>. The DPP-4 inhibitors also show benefits in glycaemic control and are weight neutral. A long-acting version of exenatide (an incretin mimetic) is in development.

Another significant advance in the diabetes

armoury is the development of continuous glucose sensing meters, such as the MiniMed Paradigm REAL-Time system (Medtronic). This system has integrated an insulin pump with real time glucose sensing. Other such meters are also available or in development.

Researchers at the Royal Melbourne Hospital, Australia, are currently conducting trials of the first self-administered insulin protein to the mucosal immune system in people with type 1 diabetes. A mini-trial in 38 children at high risk of developing type 1 diabetes demonstrated the intervention's safety and its ability to stimulate changes to immunity to insulin similar to that observed in animal experiments.

## This house believes that diet is more important than physical activity in preventing diabetes

**P**am Dyson (Dietitian at the University of Oxford) championed the case for dietary interventions in type 2 diabetes. 'There's not much evidence either way,' she warned delegates.

The Finnish Diabetes prevention study has shown that a combination of diet and exercise can give around a 60% decrease in the progression to diabetes in people with impaired glucose tolerance. However, teasing apart the relative contributions of each is problematic.

As type 2 diabetes is a weight sensitive condition, it would follow that diabetes prevention is all about reducing BMI. 'Exercise is not effective as an independent weight loss strategy,' Pam said. 'But it is great for weight maintenance.' While the Cochrane Database concludes that there is no evidence that physical activity alone is an effective method of reducing BMI, work by Douketis shows that there is such evidence for dietary restriction.

Pam argued that diet modification is the preferred route to weight loss and the more successful. 'In a US study, 56–69% of people who successfully lost weight did so through a reduction in energy intake, compared with just 21–54% of those using physical activity alone.'



**M**ike Baxter (Consultant Diabetologist/Endocrinologist, Ashford and St. Peter's Hospitals' NHS Trust) took up the defense of physical activity. 'I agree that the root of the problem is obesity,' he began. 'And that this is driven by food intake and inactivity.'

His main argument focused on distinguishing between physical activity and exercise. The Finnish Diabetes Prevention Study used 30 minutes of walking per day as part of its intervention. 'This is much more acceptable than going to the gym,' Mike said. 'Plus, diets are difficult to adhere to. Diet and food are part of the culture, as is alcohol, which contains calories and increases hunger. Ensuring people eat less will require the same kind of legislation as that for smoking and it is a huge battle against big businesses to change what we eat. Therefore, exercise is the only culturally acceptable solution.'

Everyday activities, such as using the stairs instead of the elevators, provide an easy and acceptable way to fight obesity and diabetes. 'We don't all need to be operating at the level of elite athletes,' he said, 'Just as we don't all need to work to exhaustion to get the benefits.'