

Managing diabetes: Embracing change and the benefits of technology

In our last issue, Pam Brown reflected on the complexity of diabetes management in her editorial – the abundance of guidelines and the many drugs to choose from. At times it can feel quite overwhelming, but it really does help to break this complex decision-making process into simple steps. It was this philosophy that prompted us to create the *How to* series, our *At a glance* factsheets and, most recently, the *Need to know* crib sheets.

In this issue, we include an updated [How to initiate and support continuous glucose monitoring](#) to reflect this changing landscape. Accessibility to continuous glucose monitoring (CGM) has widened, and many people with diabetes who receive their diabetes care solely within primary care may be eligible for this technology.

Initiation of both real-time CGM (rtCGM) and intermittently scanned CGM (isCGM) has tended to be delivered by diabetes specialist teams, but all that is set to change. In the recently updated NICE guidance on the management of type 2 diabetes in adults (NG28; NICE, 2022), access to CGM was opened up for people with type 2 diabetes on multiple insulin injections per day. Many colleagues have asked how “multiple injections” is defined – presumably this means more than one? However, it is important for us to know that some additional eligibility criteria are required, including recurrent or severe hypoglycaemia, impaired hypoglycaemia awareness, a condition or disability that means the user cannot self-monitor capillary blood glucose, or the person would otherwise be advised to self-monitor at least eight times a day.

I do feel disappointed that more individuals with type 2 diabetes on insulin will not fit the criteria for what has been described by many as “life-changing”. We hear so much these days about equity of care and resources and “levelling up”, so why is it that a person with type 1 diabetes on a similar insulin regimen is eligible

when someone with type 2 diabetes is not? Do they not stand to gain the same benefit in terms of an improvement in their diabetes control as well as quality of life? Potentially, I am sure many would but, like most things, it comes down to cost and finite resource. However, wherever you work in primary care and whatever your local policy, you will need to know more about this kind of technology and how to enable appropriate initiation.

Our other *How to* guide concerns the identification and management of [steroid-induced diabetes and hyperglycaemia](#). Every so often, I get a task asking me to advise a person whose blood glucose levels have risen suddenly. Reviewing the person’s current medication is often the first step and, on several occasions, I have found steroid therapy to be the likely culprit! Interestingly, one of the preferred drugs of choice for managing steroid-induced hyperglycaemia is gliclazide. In recent years, there has been so much focus on the newer glucose-lowering agents that we may be less familiar prescribing gliclazide.

Over the summer we published the first of our new *Prescribing pearls* series, which focuses on practical aspects of prescribing some of our older agents. We started with [metformin](#), which remains the first-line drug choice alongside diet and lifestyle in most guidelines. Moving on, it seemed to make sense to cover sulfonylureas next, as they do appear at the top of the new algorithm in NG28 as a rescue therapy. At a recent meeting, I heard a colleague say that it was “criminal” to prescribe gliclazide these days when there are so many other superior agents. I felt a pang of guilt because I do prescribe gliclazide, and actually slightly more so over the last 12–18 months, mainly because I have seen so many individuals with exceptionally high HbA_{1c} and osmotic symptoms that require a rescue therapy. Look out for our second *Prescribing pearl*, written by our PCDS Committee pharmacist representative, Hannah Beba, which will be published soon.



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I also enlisted Hannah’s help at the end of September, when it became apparent that there were significant supply issues for some GLP-1 receptor agonists. We were advised not to initiate Trulicity in new patients to preserve the limited supply for those already taking the therapy. Good news for the manufacturers of Ozempic, I fleetingly thought, before realising one Friday afternoon at 5 p.m. that there too was a supply problem, as requests came in from our local chemist unable to order Ozempic from the wholesaler. That weekend, a few of us on the PCDS Committee put our heads together and drafted a plan.

A week or so later, the Department of Health and Social Care issued medicine supply notifications. It confirmed that supply of both of these once-weekly agents will only be available for existing patients. At the time of writing, this is a rapidly changing situation and, although it was suggested that supplies of Ozempic 1 mg would be available for existing patients from the week commencing 17 October, we felt there remained the very real possibility that supply issues may persist up to, or even beyond, January 2023. We chose, therefore, to publish a PCDS consensus statement providing [A strategy for managing the supply shortage of the GLP-1 RAs Ozempic and Trulicity](#). At the time of writing, it has been downloaded over 16 000 times, which is testament to the need for support and guidance.

Of course, diabetes management isn’t just about prescribing drugs. Lifestyle choices have a huge impact on the condition, and our discussions about diet, activity and managing stress should form an integral part of our discussions with people living with diabetes. However, despite often being described as the cornerstone of diabetes management, this is not a topic well covered in our training, and many healthcare practitioners lack confidence to support and advise on lifestyle. Take diet as one example – the evidence base is rapidly changing and there is much controversy around what constitutes healthy eating. However, lifestyle is tackled in the recently updated ADA/EASD consensus, and Pam provides a really helpful summary in [So what should we recommend to people with diabetes about lifestyle?](#) The five “S”

words relating to 24-hour physical behaviours really stood out for me: sleep, sweating (aerobic exercise), stepping, strengthening and sitting (breaking up prolonged sitting).

It was interesting to see sleep in the physical behaviour section and perhaps we don’t fully acknowledge the impact of poor-quality sleep on a person’s health, wellbeing and, importantly, ability to optimally self-manage their diabetes. You may like to re-visit the lifestyle discussions factsheet on [Sleep and type 2 diabetes](#).

Our latest interactive case study is designed to improve your understanding and problem-solving skills around [managing foot problems](#) in those with diabetes. Test your knowledge around the typical signs and symptoms of diabetic neuropathic pain, how to perform a foot examination and which drugs you would choose to treat diabetic peripheral neuropathic pain.

Finally, I didn’t want 2022 to end without some mention of insulin, one of the greatest medical breakthroughs in history – saving millions of lives around the world and triggering a century of diabetes discoveries. Although 2021 marked 100 years since the discovery of insulin, it was 1922 when insulin (described “a thick, brown muck”) was first administered to a person with type 1 diabetes.

By 1920, scientists knew that cells in the pancreas produced insulin and they had worked out that these were the cells destroyed in type 1 diabetes. Attempts were made to extract insulin from these cells without destroying them in the process, which proved to be something of a challenge. In October 1920, Frederick Banting – a Canadian surgeon – enlisted the help of a scientist, John MacLeod, who provided the labs needed to conduct their experiments and also brought in a research student called Charles Best, who specialised in testing glucose levels in blood, to help out. Progress was initially slow and many experiments failed but, by November 1921, they had successfully treated a dog with diabetes with their insulin extract for 70 days. James Collip, a biochemist, joined the group to work on purifying insulin so that it would be safe enough to be tested in humans.

In January 1922, a 14-year-old “charity” patient named Leonard Thompson, who had

type 1 diabetes, was injected with the extract, but it was so impure that Leonard experienced a severe allergic reaction. However, six weeks later, a refined extract caused his blood glucose to fall from 28.9 to 6.7 mmol/L in 24 hours, and Leonard lived a relatively healthy life for 13 years before dying of pneumonia (for which there was no treatment) aged 27.

In 1923, Banting famously said, “Insulin does not belong to me, it belongs to the world.” He wanted everyone who needed it to have access to it. The patents on insulin and how to make it were sold for less than a dollar! Eli Lilly became the first company to mass-produce insulin and it became commercially available in October 1923. One hundred years later and we have over 30 different types of insulin to choose from, including higher concentration and biosimilar insulins. There are many more developments in the pipeline, including once-weekly basal insulin!

The way insulin is delivered has also changed beyond recognition. Initially, it had to be administered using vials and pretty barbaric-looking syringes, and needles that had to be boiled in water to sterilise them! Incredible to think it wasn't until 1985 that the first insulin pen was launched and, a decade later, the prefilled disposable insulin pens. More recently “smart” insulin pens have been developed that link up with smartphone apps to provide reminders and dosing recommendations based on glucose data. Of course, there have been huge advancements in the field of glucose monitoring, from the development in the 1940s of test strips that changed colour depending on the amount of glucose in the urine, to the first blood glucose testing strips in the 1960s. We now have sensors that can measure interstitial glucose levels through the skin without the need to take a drop of blood.

Eligibility for the use of CGM, which includes both real-time and intermittently scanned devices, is increasing as national organisations, such as NICE, update their guidelines (see my earlier comments) and they will become more

familiar to those of us working within primary care. This reminds me of just how much our roles have changed over the years. Many primary healthcare practitioners possess specialist diabetes skills and competencies. As I've said so many times before, the extent to which clinicians are involved in insulin management will vary, but insulin is a high-risk medication and we all need to keep up to date.

Things are changing rapidly, with new insulins appearing on a regular basis. You may have already completed our *Six steps to insulin safety* e-learning module, but we decided to update it because of these recent changes. The updated module will be launched at this year's [National Conference of the Primary Care Diabetes Society](#). Final preparations are well underway for this free-to-attend, two-day event, which is taking place on 23–24 November in Birmingham.

After the obligatory switch to a virtual platform for the past two years, it is really exciting that, this year, we will be meeting face to face. As always, we are including a broad range of topics on managing diabetes in primary care, but the event will also provide a wonderful opportunity to meet up with colleagues. Personally, this is an aspect I have greatly missed, because we learn so much from networking with others. Delivering presentations virtually has its challenges (for me at least, as I'm not the most IT-savvy individual – thank goodness for teenagers at home!). My competence navigating Zoom and Microsoft Teams has grown exponentially, but not without considerable stress at times. I am looking forward to being able to see my audience, and hopefully stimulate some lively discussion and share experiences. You may have read our [How to manage high HbA_{1c} in people with type 2 diabetes](#), and this is the topic that Pam and I have chosen for our Masterclass on Day 1 – I hope to see you there! ■

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NICE (2022a) *Type 2 diabetes in adults: management* (NG28). NICE, London. Available at: <https://www.nice.org.uk/guidance/ng3> (accessed 02.11.22)