DIABETES
All Party Parliamentary Group

Minutes

The Future of Diabetes Technology
Tuesday, 17th November 2020
Zoom (Virtual)
4:00 – 6:00pm

Chair: Derek Thomas MP, MP for St Ives

Speakers/Panelists:

- Roy Johnson, Person with type 1 diabetes and Patient Representative
- Mark Cook, Government Affairs Director, Medtronic UK and Ireland
- Professor Roman Hovorka, Professor of Metabolic Technology, Institute of Metabolic Science and Department of Paediatrics, University of Cambridge.
- Sufyan Hussain, Consultant Diabetes and Endocrine Physician, Guy's and St Thomas Hospital

Speeches

Roy Johnson, Person with type 1 diabetes and Patient Representative

Roy has type 1 diabetes, as does his adult son. He is a patient representative of various national committees including the National Diabetes Audit, National Diabetes Food Audit and Scientific Research Advisory Group.

Roy noted that diabetes technology has hugely improved care as new innovations are found, and prevented him from having a foot amputated 18 years ago. He noted that technologies used then have become cheaper to obtain and easier to use.

Roy spoke about his use of a closed loop system, both informally and under the clinical supervision of Guy's and St Thomas' NHS Foundation Trust. He noted that since using closed loop systems his blood glucose control has been much improved, and the system was improving all the time.

Roy noted he was onboarded onto the system during the coronavirus pandemic, and that other people with diabetes have not been able to benefit from the system he uses, due to a lack of providers offering this. He noted that by onboarding people to use diabetes technology, their lives will be transformed, resulting in a healthier life and reducing pressures on the NHS.

Mark Cook, Government Affairs Director, Medtronic UK and Ireland

Mark's son has type 1 diabetes and so he is speaking both in a professional capacity, and understanding how difficult living with diabetes can be.

He noted that diabetes technology has existed for a long time, with the first blood glucose monitor released in 1989 and first insulin pump in 1983.

Mark spoke about continuous glucose monitoring and hybrid closed loop systems, which work to support people with diabetes to spend more time in range, a desirable measure for good diabetes management. This is the case because automation means people with diabetes do not have to make as many decisions, and are less reliant on 'carb counting', which is difficult for many people.

Mark produced data from the Minimed 780, demonstrating that people using this system were more likely to be 'in range' than with non-closed loop interventions. This can help to prevent life-changing complications and support better long-term outcomes.

Mark also spoke about the opportunities for diabetes technology in the future, such as harnessing 'Big Data' to support carb counting, and to produce better automation. He highlighted that to reduce the impact diabetes has on individual lives and the health system, more technology should be used in line with a recommendation provided in the 'Getting it Right First Time' (GIRFT) report released last week.

Professor Roman Hovorka, Professor of Metabolic Technology, Institute of Metabolic Science and Department of Pediatrics, University of Cambridge.

Roman works on developing artificial pancreas (or 'closed loop') systems at the University of Cambridge. He explained that an artificial pancreas system consists of a blood glucose meter and an insulin pump, to mimic the effect of the pancreas.

He demonstrated that artificial pancreas systems can help to support better blood glucose management, reacting to differences in glucose levels that are difficult for individuals to mitigate.

Roman noted that he has been working on artificial pancreas systems since 2007, leading to a now commercial system. While it was initially unclear that this would be an innovation in diabetes care, he is clear this represents the future of diabetes technology.

Roman noted that artificial pancreas systems have benefits for diverse populations, including young children and pregnant women. He noted this improved time in range and quality of life, reducing hypoglycaemia and anxiety for parents of young children with diabetes.

Roman also suggested that these systems can be used to support people with type 2 diabetes, including those who have particular needs, such as people undergoing dialysis.

Roman ended by suggesting that better stakeholder engagement, funding agreements and healthcare professional education were key to promoting better access to diabetes technology. He also observed that NICE's regulation timescales were not aligned with fast-moving technological innovations.

Sufyan Hussain, Consultant Diabetes and Endocrine Physician, Guy's and St Thomas Hospital

Sufyan has type 1 diabetes and works as a Consultant Diabetes and Endocrine Physician at Guy's and St Thomas' Hospital. He noted that people with diabetes, particularly type 1 diabetes, are likely to suffer complications such as angina, strokes or heart attacks. This is costly to the NHS and preventing these complications can save the health system money.

Sufyan noted that many people with diabetes do not achieve NICE's recommended HbA1c reading of 7%, with certain groups disproportionately unlikely to achieve this. Sufyan explained that this is down to geographical variations in care provision, as well as due to other health determinants such as socioeconomic factors, ethnicity and mental health status. He also provided data to show that other developing countries, like US and Germany achieve better outcomes than the UK for type 1 diabetes.

Sufyan explained that using diabetes technology supported better longer-term care, demonstrating a need for automation through closed-loop (artificial pancreas) systems. He observed that working in his clinic those using closed-loop systems have much improved HbA1c readings, achieve excellent glucose levels with a reduction in mental burden. He suggested that to widen access to these systems there needs to be a larger emphasis on supporting people with proven technologies like insulin pumps or continuous glucose monitoring, and targeting groups who have poorer outcomes.

Sufyan observed that recent ring-fenced Flash CGM funding for 20 percent of people with type 1 diabetes helped overcome barriers to promote it uptake within the type 1 population. However, this and access to insulin pump therapy lags behind other developed countries. For example in Spain, everyone with type 1 diabetes can receive Flash. Similarly, insulin pump access and uptake is higher in most of Europe. He also noted that there are benefits to providing certain groups with type 2 diabetes with diabetes technologies.

Sufyan ended his talk by saying that challenges to widen access include a shortage in trained healthcare professionals, variation in the implementation of criteria and complex administration. He says there is a very strong case for ring-fenced technology funding. The vision would be to create a future where everyone with type 1 diabetes has access to CGM, with improved access toinsulin pumps by 2025 and closed-loop (artificial pancreas) systems for everyone with type 1 diabetes by 2030. For type 2 diabetes, access to technologies such as CGM in high-risk groups, young and those with mental health issues on insulin needs to be enabled.

Q&A (summarized)

Q: Why do you think diabetes technology has lagged behind consumer technology so badly?

A (Roman Hovorka): Cost considerations for developing smaller volumes of clinical technology, and the regulatory environment is much stricter than commercial goods.

Q (Derek Thomas): What do we need to do to change that? Or should we just accept that?

A (Mark Cook): We should want products that have been rigorously tested. Industry does want to innovate – but licensing and safety checks mean this process is elongated.

Q (Derek Thomas): The NHS can procure large numbers of devices to drive down cost and promote use. Is that right?

A: (Roman Hovorka): Yes, in principle, but currently devices are procured by individual CCGs.

A (Sufyan Hussain): There are groups of people with type 2 diabetes who would benefit from technology. Evidence as well as clinical experience supports this.

Q: Is the NHS funding model of planning for one-year of spending appropriate and does that work for diabetes technology?

A (Mark Cook): No, as there are two benefits from spending on diabetes technology – the immediate cost saving of equipment and longer-term saving from better outcomes. We should improve how longer-term savings are considered in spending judgements.

Q: Ring-fenced funding for Flash has been successful. Should this happen for technology more generally?

A (Roman Hovorka): National funding for closed loop systems is vital, as this would drive CCGs to provide them. It also encourages healthcare professional education and training.

A: (Mark Cook): As more people use technology through national funding, it will advance and become easier for people who are not conventionally ‘good’ patients to use and benefit.

A (Sufyan Hussain): Yes (to ring-fenced funding question). National ring-fenced funding incentivizes CCGs to roll technology out for their local population using funds that are separate to the diabetes budget.

Q: Patients must use an insulin pump for four years – should this be reduced given the speed of technological advancements?

A (Mark Cook): Yes. A subscription model would make more sense for patients. The NHS currently do this as a pump is considered a capital purchase, and four years is a pump's warranty.

A (Sufyan Hussain): There are big challenges with waiting times to start on a pump or to receive an upgrade, especially now after covid. Given the challenges healthcare professionals are facing, if more frequent pump changes are considered it will require industry solutions to implement this.

Q (Derek Thomas): What about value-based commissioning to pay for technology?

A (Sufyan Hussain): This could be beneficial as long as the right outcomes or values are considered such as time in range or quality of life.

Q: How do we make government understand the need for more funding for diabetes technology?

A (Derek Thomas): By harnessing lessons learnt by the coronavirus pandemic, and supporting the government's aim of rebuilding the economy. Being clear that diabetes technology saves the NHS money will support this, particularly compared to the cost of complications like amputations. There may be opportunities to raise this as we understand how preventative action can ease health pressures in the future.

Q: What has been the impact of coronavirus on conducting research?

A (Roman Hovorka): We have continued but many projects have stopped or been paused, impacting data collection. The charity sector is not in a position to provide funding to the extent it could before the pandemic, and there will be less funding from Europe. Coronavirus research is also dominating the research agenda.

Q: Can each speaker provide their top tip to improve access to diabetes technology for people with diabetes?

A (Roy Johnson): Join a local diabetes group and raise awareness in your community, engaging healthcare professionals.

A (Sufyan Hussain): Having good relationships with commissioners is key. Trust and understanding (between specialists and commissioners) helps to enableCCGs to improve support for people with diabetes.

A (Mark Cook): Ring-fenced diabetes technology funding, and work to improve understanding on the value of diabetes technology.

A (Roman Hovorka): Thinking about how to support healthcare professionals to build relationships with unsupportive CCGs or commissioners, to make change happen.