

Partnership pioneers safer insulin injections

10 July 2017



Credit: Cardiff University

Work by Cardiff University has shown a device for self-managing diabetes medication could save the NHS millions of pounds.

Experts gathered user feedback for the NeedleBay insulin self-management device, helping Diabetes Care Technology understand and develop its product.

NeedleBay allows users to prepare needles a week in advance, attach and remove them safely from the [insulin pen](#), and dispose of used ones touch-free.

Research led by Professor Molly Courtenay at Cardiff's School of Healthcare Sciences gave the company insight into how NeedleBay performed – and feedback on how to make it more effective.

Professor Courtenay said: "We developed a questionnaire that was delivered over the phone to patients who had used the NeedleBay system. And it really explored their experiences of them injecting themselves with insulin before they used the system, and then when they had used the system."

Patient Carole Terrett, a former hospital worker from Ebbw Vale, has not had a 'hypo' episode,

where her glucose was too low, or a 'hyper' one, where her levels were too high, since using the system.

"I'm a Type 2 [diabetes](#) patient, and take insulin in the morning with tablets, and in the evening. Every Sunday I fill up the NeedleBay. I've got two needles in the pod, and the device helps me manage the injections, and it reminds me whether I have, or haven't, taken the dose, and makes sure I haven't double-dosed on it either."

Before using NeedleBay, over two thirds of the 226 survey participants had missed [insulin injections](#) or mistakenly taken a double dose. During use of the device, patients making these errors dropped to around 20%.

Dr Judith Carrier, Senior Lecturer at the School of Healthcare Sciences, said the survey showed NeedleBay had a dramatic impact on users.

"It wasn't just a small effect. People were coming back and saying, 'Yes, this has actually made a huge difference to my overall diabetes control.' And it was particularly helpful for users with some form of disability."

There was also a sharp decline in the number of people accidentally pricking themselves while attaching or removing the insulin pen from the needle, and a 20% increase to 99% in the number of people who felt in control of their medication.

Andrew Tasker, CEO of Diabetes Care Technologies, hopes to work with Cardiff on future projects: "The real appeal of working with Cardiff University is their initiatives offer a 'real world' clinical approach in dealing with consumers and patients using the product in the community, and that was the real difference that Cardiff brought to this study. It also gives us real data to show how the product can save the health service millions."

Professor Molly Courtenay added: "It's very important for people who require insulin to manage

their medication appropriately. If glucose levels aren't maintained there is a risk of complications including vision loss, kidney failure or cardiovascular disease. NeedleBay made the delivery and storage of [insulin](#) very easy for the patient."

Data show there are 177,000 people in Wales living with diabetes. Some 3.8 million people aged over 16 in England had diabetes in 2015, around 9% of the adult population.

In addition to developing NeedleBay, Professor Courtenay has been working closely with Health Boards, including Aneurin Bevan University Health Board, to develop the role of non-medical prescribers in Wales.

Legislation introduced over a decade ago, enabling nurses, pharmacists and allied health professionals to prescribe medicines, has increased the accessibility of services and increased cost savings.

Provided by Cardiff University

APA citation: Partnership pioneers safer insulin injections (2017, July 10) retrieved 17 November 2022 from <https://medicalxpress.com/news/2017-07-partnership-safer-insulin.html>

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