BioSpectrum the business of Bio & Health Sciences

Cambridge Consultants develop smartphone operated insulin injection pen

08 October 2014 | News | By BioSpectrum Bureau

Cambridge Consultants develop smartphone operated insulin injection pen

Product development firm Cambridge Consultants has designed an injection pen for diabetes patients that aims to make daily management of the disease an easier, more accurate task. The KiCoPen device is designed to capture the exact dose delivered and send the information to an associated smartphone app. And all without a battery, the action of removing the injector cap powers the device. There is currently no injector pen on the market that combines these capabilities.

Diabetes affects more than 371 million people worldwide and is expected to affect 552 million by 2030. While patients can live a very long and healthy life with diabetes, it is all dependent on good glycaemic control, which in turn depends on taking the required amount of insulin at the appropriate times throughout the day. If patients do not maintain their glucose levels within the target range, this can damage their organs, blood vessels and nerves over time, putting them at risk of further health complications which is driving the high cost of diabetes in the healthcare system.

Current market offerings allow patients to know when the last insulin dose was given by freezing the time the cap was taken off the pen. This, however, leaves room for error if the cap falls off accidentally, providing false confirmation that the dose was taken. By being able to confirm the actual injection event and the exact dose of insulin delivered and deducing the time it was delivered via the smartphone, KiCoPen allows the patient to be confident they are on track with their daily insulin regimen. This in turn improves patient compliance and results in better glycaemic control, helping to reduce late-stage complications.

Additionally, the KiCoPen concept uses energy harvesting from the motion of the cap removal and replacement to power the

electronics, which are based on a single chip. Eliminating the battery gives greater design freedom to create a better user experience. It also means the injector can be more reliable, manufacturing and assembly effort is reduced, and the device can have a lower environmental footprint.

"Our new injection pen design allows patients to easily self-manage their diabetes treatment, while ensuring they're getting the exact amount of insulin they need. It also proves to manufacturers that such an innovative, low-cost design can also be applied to pre-filled pens." said Ms Vaishali Kamat, head of digital health at Cambridge Consultants.

Cambridge Consultants is also developing a companion app that can provide the patient with access to all the necessary data and relevant analytics - in one place - to manage their diabetes.