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Industry Insights

Blood sugar tech magic: Monitoring diabetes with mobile apps

Kirsten Shastri • February 25, 2020

With growing numbers of people living with chronic health conditions[1] and an ageing population adding pressure to stretched resources, many in the healthcare world are turning to technology for support.

An estimated 15 million people in England suffer from long-term conditions1 and, according to the British Geriatric Society, more than two-thirds of over 65s will be living with multiple health conditions by 2035[2]. People with chronic conditions often rely on regular interaction with their healthcare provider and today the treatment of chronic conditions takes up £7 in every £10 of total health and social care expenditure and 50% of all GP appointments in England[3].

The use of technology, including mobile apps, provides opportunities to not only relieve pressure on healthcare resources, but for those with chronic conditions to have more control over their health and a better quality of life. However, new technology is not without its risks.

The number of healthcare apps has proliferated in recent years with some 300,000 available today. Diabetes management has become one of the areas of health most widely served by this technology with a significant proportion of new apps designed to assist those with diabetes with their self-care.

Medical advice to people with diabetes emphasises active management of the condition, as those who actively engage in their own care between healthcare visits are more likely to avoid complications associated with the disease.

Figures released in 2019 revealed that UK hospitals were dealing with 5,000 patients a day who were suffering from complications with type 2 diabetes, costing an estimated £154m a week. While these stats only

cover type 2 diabetes, which accounts for nine in 10 diabetes diagnoses[4], it highlights the growing cost of managing the disease.

Recognising this, the NHS library contains over a dozen apps that aim to help those with type 1 and type 2 diabetes, some of which are available on referral or prescription by a GP.

However, a study published in the British Medical Journal (BMJ) of diabetes apps more generally revealed many lack crucial functionality or have been designed in a manner inconsistent with chronic care models, potentially putting patients at risk[5].
The study found that many apps lacked functionality that incorporated guidelines, education or expertise to inform care decisions. Despite this being of crucial importance to self-care, the study found many mobile apps did not apply care guidelines in their design meaning they were unable to help with individualised care planning or expert intervention.

It also added that despite the advantages offered by apps in improving healthcare, their adoption could lead to misdiagnosis and increased risk if the functionality is not properly understood by both patients and those providing their care.
Even where the app possesses the functionality to assist the user in managing their condition, the adoption and reliance on technology increases risk and complexity to the provision of care. Technical issues with algorithms or the software within the app could prompt the user to take a course of action that is detrimental to their health or provide false assurances regarding their blood sugar levels.

In November 2019 a leading glucose monitor, and app suffered just such a failure. The device, developed by Dexcom, provides real time blood glucose monitoring for type 1 diabetes sufferers and warns individuals, by way of mobile app, when blood sugar levels climb too high or drop too low. The device and app are popular with parents of children with diabetes as they allow them to monitor blood glucose levels remotely without the need to perform finger prick tests every few hours.

However, users woke one morning to find that overnight the app had suffered an outage and had ceased to monitor blood glucose levels or issue warnings, many only finding out hours after the outage had occurred. As reported in the New York Times[6] some parents, on realising the fault and performing finger prick tests, found their child’s blood glucose had dropped to severely low levels.
Severe low blood sugar, hypoglycaemia, requires a sufferer to take immediate corrective action. If not addressed, it can result in seizures and the loss of consciousness requiring immediate medical attention.

Where individuals are reliant on an app for self-management of their condition and a fault in design leads to injury, both the doctor who recommended its use and the designer could be drawn into claims for compensation. The problem for the medical professional is that their traditional medical malpractice insurance will not necessarily cover claims for bodily injury arising from a failure of design in technology they recommend to patients. The same is true for the company that developed the app.

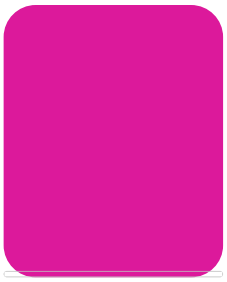
Those who develop such apps and medical professionals who

recommend or support their use to their patients should ensure they have coverage in place that protects them from suits for bodily injury as a result of tech failure.

Beazley is an established leader and innovator in the insurance markets for healthcare, technology and cyber. We have drawn upon our experience of writing insurance in these markets to create Beazley Virtual Care, which provides seamless cover for both medical professionals who use technology and those who develop solutions for the industry.

Those active in the sector would normally need at least two insurance policies, and often more, to cover their varied exposures.

Beazley Virtual Care avoids the potential gaps in coverage that can arise with such a piecemeal approach. The coverage can be tailored to meet the needs of all participants in the value chain.



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2. Projections of multi-morbidity in the older population in England to 2035, Age and Ageing (2018)
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4. NHS treating 5,000 diabetics a day as one in 10 patients now suffer with illness, figures reveal, The Telegraph (2019)
5. Conformity of Diabetes Mobile apps with the Chronic Care Model, Raheleh Salari, British Medical Journal (vol.26, Issue 1, 2019)
6. In Weekend Outage, Diabetes Monitors Fail to Send Crucial Alerts, New York Times (2019)

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