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Creative Clinics with Continuous Glucose Monitoring in the Cloud

Case Study Teaching Tips

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model of care

private practice

technology

type 1

Introduction

The recently-expanded federal subsidy for Continuous Glucose Monitoring (CGM) and flash glucose monitoring is a critical step towards comprehensive access to vital diabetes management tools (tools or data) for both people with diabetes and diabetes healthcare professionals (HCPs). At the Type 1 Diabetes Family Centre in

Perth, we believe that the capacity to share the real-time diabetes data that CGM and flash glucose monitoring generate has exciting applications in the clinical context. Shared real-time data not only helps people to manage their diabetes well, it can also be tremendously helpful to HCPs if we set up our clinics to utilise it.

Many diabetes HCPs already provide some aspects of a virtual service, logging into pump or CGM data in order to advise individuals with diabetes over the telephone or respond to queries on email. Furthermore, it has been shown that programs that are flexible and offer interaction via internet, mail, or telephone both extend reach and improve attendance ¹. At the Family Centre, I utilise real-time CGM data in an intensive, immersive virtual clinic model that has fundamentally changed my ability to be effective as a diabetes educator, giving me a direct window into an individual's world so we can solve problems together rapidly, safely and efficiently.

This article explores the potential benefits of a clinic model that uses cloud-based diabetes data in a different way, and how it could break down the barriers to effective care that people with diabetes and HCPs may experience in the conventional, face-to-face clinic model.

Conventional Clinics

Consider this hypothetical situation. Jane travels 40 minutes each way to visit her diabetes educator, and must take time off work to attend appointments. She struggles to log her blood glucose for more than a few days at a time and as such, analysing her diabetes management is difficult. Managing blood glucose during exercise is Jane's biggest challenge: she finds it very hard to put the advice she gets in clinic into practice, as she doesn't have the confidence to continue to adjust things on her own if the advice doesn't work the first time. She feels as though she is failing in her diabetes management, and feels ashamed to talk about it. Jane is open to wearing diabetes technology such as flash or CGM.

Time limits

Face-to-face clinic sessions have limitations that can seriously impact a person's diabetes management and a HCPs ability to support the individuals they work with. Travel time and taking leave from work are commonly cited barriers to attending clinic appointments, and may reduce appointment frequency ^{2,3}. In private practice, the cost and availability of a hired clinic space can restrict clinic availability times, which may also delay follow-up appointments.

Straight talking

For some people with diabetes, communicating challenges and concerns in a face-to-face setting can feel daunting or embarrassing. Those such as Jane may report what they believe their HCP wants to hear, and not broach issues that make them

feel ashamed. As HCPs, we do our best with the information and data we have, but if we don't have all of the information, our recommendations will not be effective and the people with diabetes we work with may become demotivated.

The downside of downloading

Many clinicians currently access diabetes related data – which may be presented as a paper logbook, a pump upload, or through a cloud-based CGM platform (or a combination of these) – during appointments in order to offer guidance. The responsibility of logging data and bringing it to clinic rests with the person with diabetes, and value may be lost if a key component of the data is missing or forgotten. HCPs must rapidly assess a considerable amount of data during the session, and may only have time to discuss one or two standout issues. If there has been significant time between appointments, the person's ability to recall the critical context in which their diabetes decisions occurred can be lost, making it difficult for the HCP to offer effective advice.

Creative Clinics

Clinic context is critical: it can impact appointment frequency, attendance rates, and the value both the person with diabetes and their HCP get from the session. However with a few creative adjustments to a conventional clinic environment, we can use the share capabilities of glucose monitoring data to supercharge clinic interactions, making them more convenient, effective and valuable for both parties.

Consider Jane: her main barriers to achieving her goal glycaemic management are travel time for appointments, anxiety around talking about her challenges face-to-face, and her lack of confidence around making adjustments on her own. She is open to wearing CGM or a flash glucose monitor, and is therefore a candidate for the clinic model I practise at the Type 1 Diabetes Family Centre.

Virtual clinic

Our immersive, virtual clinic utilises real-time, cloud-based diabetes data to support people with diabetes with decision-making in-the-moment. Over a short period of time (usually five days), they share their diabetes monitoring data (using flash or CGM) with me so we can zoom in on issues in a truly focussed way. Adjustments can be discussed and tested immediately, and follow-up phone calls, message sessions or emails are booked in the coming hours or days to review, assess and adjust further until we reach desired outcomes. We focus intensely on specific issues and rapidly iron them out, together.

Concentrated clinical advice

In a face-to-face clinic context, Jane might attend clinic with data showing re-occurring hypoglycaemia during and after her morning walk. She would most likely develop a plan with her educator to adjust her insulin around the exercise. However Jane's confidence and motivation is low, and when the adjustment doesn't quite work, she struggles. Work, clinic availability and other constraints could mean weeks or months of hypoglycaemic episodes before Jane gets to see her educator again – a deeply unsafe situation – and might result in Jane giving up her walks altogether.

By contrast, if we tackle Jane's problem using shared CGM, I can support Jane to keep on track as she attempts the adjustments suggested. We'd log into her CGM data together and plan her exercise at a set time the following day, during which I'd watch her data. We'd connect afterwards to assess how effective our plan was and discuss further adjustments, and then at set times during the course of the week to confirm further adjustments, which I can review to see what works. Following Jane, I've got a front row seat that gives me the ability to suggest adjustments, see their impact, and fine-tune.

Over five days, three real-time monitoring sessions, two phone calls and a few messages and emails, Jane and I are able to assess, adjust and solve an issue that could have caused Jane to lose her motivation to exercise forever. She felt confident and motivated, and I felt great, having made an effective and lasting change to her health.

Other benefits

For many people with diabetes, a virtual model may be an appealing way to communicate with HCPs ⁴. The act of writing a message or email helps a lot of the people I work with to distil and clarify their thoughts, which in turn helps me to support them. The cost of the virtual clinic (which is unfortunately not yet supported by Medicare) is often offset by the reduced need to take leave and travel. This is particularly important for those who live regionally ⁵. Costs for the HCP can also be minimised, as communication can happen from anywhere – not necessarily a hired clinic space.

Practical considerations

Stepping into the lives of the people with diabetes I work with by observing their CGM data initially felt daunting to me. I learned that it is imperative to develop protocols and establish clear boundaries. Virtual clinic is often the first time the person has ever had such an immersive and responsive support experience. In establishing my virtual clinic, I quickly determined my boundaries in relation to my availability and the frequency, length, platform choice and timing of communications, which I communicate clearly with them when we tailor their virtual clinic experience. I work closely with their treating medical practitioners and keep detailed notes, including noting my log-in and log-out times when we do real-time monitoring

sessions. I find that using messenger apps such as WhatsApp, which has end-to-end encryption to ensure privacy, is especially useful for note-taking as I can export the message session straight into my notes.

As a private diabetes educator, it is important to me to strike a balance between caring for those I work with and my personal life. I find I can make the flexibility of the virtual clinic model work for me – I am able to support people in a very real and effective way, and fit the virtual clinic experience around my daily life.

Conclusion

Flexibility is the future

Using shared data enables me to use real-time information and instant feedback, to work with people to help them make positive and timely changes to their diabetes management. The people with diabetes I work with love the experience, and it has helped me feel motivated and inspired as a diabetes educator. I believe there is phenomenal potential for incorporating the share capabilities of CGM and flash monitoring into new and different clinical care models, giving the clinical community the chance to become even more responsive and effective in helping individuals with diabetes reach their health goals.

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