Virtual consultations: from science fiction to clinical fact

For almost 100 years, virtual consultations remained closer to science fiction than clinical fact. Despite finding favour with many patients, improving clinical outcomes and offering logistical benefits, video consultations largely remained the preserve of a few pioneers. Mark Greener discovers that’s changing, at least in diabetes.

Introduction
In April 1924, the front cover of the popular American magazine Radio News showed a boy in bed sticking his tongue out while a doctor on a screen remotely glosscoped. The speculative feature envisaged that when the patient dialled the medic, the screen would show ‘Doctor Hackensaw himself, sitting at his desk, in the act of counting and assorting microbes’.1

For more than 90 years, pioneers tried to make this science fiction vision reality. Video consultations helped people in isolated communities access care and allowed patients and professionals to speak to specialists with specific expertise. In general, however, despite promising results, support from patients and logistical benefits for hard-pressed health services, video consultations remained the preserve of a few pioneers. Now that’s changing. In diabetes at least, video consultations are rapidly becoming routine.

Debbie Wake, Consultant in Diabetes and Endocrinology at NHS Tayside, admits to being an enthusiast for technology. ‘I’m always keen to make the best use of technology that can support the patient, help the consultation and aid communication,’ says Dr Wake who made her first medical podcast in 2000. ‘Technology could revolutionise many aspects of health care,’ she told Practical Diabetes. ‘But we’ve been relatively slow in adopting many of the advances.’

Video consultations offer a case in point. ‘Video is a powerful method for telemedicine. The patient can see that they have the health care professional’s undivided attention,’ says Shanti Vijayaraghavan, Consultant Physician with special interest in diabetes and endocrinology at Barts Health NHS Trust. ‘The health care professional can evaluate visual cues from the patient.’ And as an innovative project in Scotland shows, IT systems can automatically deliver information tailored to each patient following face-to-face or video consultations.

North of the border
People in urban England often bemoan the difficulties of attending their clinic appointment. In remote parts of Scotland, however, reaching a specialist centre can mean an expensive and stressful island-hopping flight or a ferry across notoriously choppy seas. Not surprisingly, Scotland was one of the first parts of the UK to extensively use video consultations. ‘My colleagues in the north of Scotland have used video conferencing for many years,’ Dr Wake comments. ‘But until recently the patient still needed to access dedicated software in a surgery or a local centre. Nevertheless, video consultations simplified logistics and were cost saving when you factor in travel. New advances in mobile technology, however, now mean that patients can video conference from their own homes.’

In addition, NHS Scotland funds the ‘MyDiabetesMyWay’ (MDMW) interactive diabetes website (www.mydiabetesmyway.scot.nhs.uk/), which launched in October 2008, to support people with diabetes as well as their family and friends. The site includes, for example, information leaflets, videos, patient testimonials, interactive tools and an electronic personal health record.

In addition, explains Dr Wake, who is a member of the multidisciplinary group that oversees the site, MDMW uses powerful algorithms to automatically deliver tailored information to each patient based on their diabetes data, for example, their type of diabetes, type of medication, risk of developing foot ulcers etc. ‘We are also working on algorithms that could give advice based on home uploaded blood glucose monitor data,’ Dr Wake explains. ‘MDMW delivers information about drug and lifestyle changes. Patients can read the information at their own pace, which helps self-management.’ A recent MDMW survey of over 1000 users demonstrated that 90.3% of patients felt the site improved their knowledge and 89.6% felt it helped them make better use of their consultation. Moreover, 89.3% felt it improved their motivation, while 88.2% felt the site helped them manage their diabetes.

Dr Wake believes that interactive sites, such as MDMW, could help develop a flexible, virtual model of care rather than expecting patients to turn up every four to six months to a conventional clinic. ‘The traditional model doesn’t suit patients with busy working lives, or deliver care when people need it,’ Dr Wake says. ‘We need to be a lot more flexible. In addition to the face-to-face consultations, we should be using email, text, and remote consultation, including tools like Skype.’

London calling
Some 500 miles south of Tayside, a series of projects shows that the ‘virtual model of care’ is more than a technophile’s pipe dream. Newham – a relatively socio-economically deprived part of East London with most of the population coming from ethnic minority backgrounds – faced a particular problem with high ‘did not attend’ rates. Indeed, 50% of younger people with diabetes did not attend their appointment. A survey suggested that young adults found that the appointments were inflexible and that services were difficult to access.

In response, the Newham team and NHS Choices ran a pilot that enrolled 15 patients with established type 1 and 2 diabetes aged between 18 and 25 years, from a range of ethnic backgrounds and with different self-management skills. Each patient had two online consultations. ‘Although the study was very small, the participants loved it,’ Dr Vijayaraghavan remarks.

Based on the positive response, the team won the Health Foundation’s SHINE award in 2011 for a project called DAWN (Diabetes Appointments
virtual consultations. Nevertheless, video consultations seem to reduce the number of people who do not attend for their appointment and our qualitative data are powerful. Virtual clinics seem to make a huge difference to patients' quality of life.}

Newham’s latest project – VOCAL (Virtual Online Consultations: Advantages and Limitations), funded by the National Institute for Health Research (www.vocalproject.co.uk) – is studying Skype consultations to ascertain how technology affects human interactions. They are also mapping the administrative and clinical processes needed to embed online consultations, such as changes to clinical care pathways, staff roles and use of traditional outpatient space. Finally, the VOCAL team are interviewing national policymakers and other key stakeholders to explore factors around the success and potential transferability of virtual consultations.

The death of face-to-face consultations?

Nevertheless, video consultations aren’t for everyone. ‘Most people want a mix of virtual and face-to-face consultations. One lady came along to our clinic instead of keeping the online appointment when she discovered she was pregnant,’ Dr Vijayaraghavan says. ‘She was very emotional and needed face-to-face support. This would have been difficult over the video.’

‘You need a range of care options to meet the needs of patients,’ Dr Wake agrees. ‘Virtual consultation won’t suit every patient and they won’t suit every health care professional. We need different types of care for different people at different times delivered in different ways.’

Furthermore, some people have problems finding a private space at home to allow them to have the consultation. And not everyone has suitable broadband or smartphones. ‘Some broadband widths and modern devices can struggle with video consultations, especially using the dedicated systems,’ Dr Vijayaraghavan comments.

Dr Wake suggests, however, that the digital divide is not straightforward. ‘Broadly uptake of technology maps with socioeconomic status,’ she says. ‘Nevertheless, most young people from deprived backgrounds have smartphones. They can appreciate the benefits of using the technology to have communication with their health care team.’

In addition, there is a certain degree of resistance among some patients and professionals to technology. ‘Many patients and health care professionals are initially sceptical,’ Dr Vijayaraghavan adds. ‘But when they see how well it works they love it.’

Indeed, the barriers among professionals seem to be breaking down. ‘Fifteen years ago there was considerable resistance to using technology among some health care professionals. But about 5–10 years ago attitudes began to change,’ Dr Wake remarks. ‘Today, some people are less enthusiastic than others, but there is more acceptance especially once the benefits become clear.’

Indeed, the Newham studies show that virtual consultations produce numerous efficiency savings including increased capacity through shorter, more focused consultations and fewer ‘did not attends’. Increasing the volume of virtual consultations, grouping web appointments together and releasing clinic infrastructure will reduce costs, Dr Vijayaraghavan says. Dr Wake adds that many economic benefits can be difficult to capture, especially in urban settings where travel poses less of an issue than in the Highlands. ‘Many of the economic benefits accrue to the patient, who doesn’t have to take time off work, for example,’ she remarks. ‘A focus on the costs for the NHS would considerably underestimate the benefits.’

Meanwhile, Newham’s success is being rolled out into other settings, such as pre- and postoperative appointments and thyroid disease consultations. So, increasing virtual consultations are becoming routine. Fittingly, Hugo Gernsback, who edited Radio News, published the first magazine devoted to science fiction. He even coined the phrase ‘science fiction’. Now almost a century after that prophetic cover, virtual consultations in diabetes are finally moving from science fiction to clinical fact.

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Reference