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SUPPORTING PATIENTS ON THE ROAD TO SELF-CARE

In this article, Michael Earl, Director, Pharmaceutical Services, at Owen Mumford, discusses the importance of transitioning current healthcare models to embrace patient self-management and how advanced drug delivery device technologies, such as connectivity, can ease this burden on overstretched healthcare services.

The future of chronic illness treatment will rely on improved collaboration between healthcare professionals and patients to support effective self-management and self-administration of therapies. Patients need to be educated about their condition and its treatment if they are to take control of their own care, rather than being passive recipients. Efforts to improve the patient experience have led to developments in drug formulation, medical device design and patient-professional interactions. There is a trend towards easy-to-use injectable therapies for self-administration and the development of connected devices – providing patients with more independence and allowing healthcare professionals to monitor conditions between consultations.

The covid-19 outbreak increased the burden on global healthcare providers and, as a result, increased the difficulty of treating patients. In the UK, the 15 million sufferers of chronic diseases – who would normally take up 50% of GP appointments and 70% of bed days – were unable to receive the same level of attention, and aspects of care had to be modified to ensure patients still received the necessary support.[1]

While the worst of the pandemic may have passed, healthcare services must continue to adapt to deal with the difficulties of treating an ageing population that is increasingly susceptible to multi-morbidities and chronic conditions. By 2030, one in every six people worldwide will be aged 60 or over.[2] Enabling broader self-administration of medication is a key factor in helping prevent healthcare services becoming overwhelmed. Those in the industry recognise this, with a recent survey of over 3,000 clinicians across the globe finding that almost half (49%) believed that the majority of healthcare will be provided within patients' homes in 10 years' time.[3]

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PATIENT SELF-MANAGEMENT – EDUCATION AND STANDARDS

Patients with chronic diseases already take on significant responsibility for their own treatment, with health maintenance, illness prevention, monitoring and condition management predominately performed outside a clinical environment. Under a shared-care approach, this is reinforced with appropriate support from healthcare professionals to help patients feel confident in their ability to successfully adhere to treatments and manage their own condition. For example, tailored support can provide reassurance for patients who have specific worries or phobias until they are able to overcome them.

The shared-care approach is receiving attention from healthcare authorities across the globe. In Europe, standards on patient participation in self-care practices were first established last year.[4] The standard will be an important guide not only for patients

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and healthcare practitioners but also the researchers and businesses that are involved in every facet of industry.

As a more detailed example, the UK NHS is making personalised care an important aspect of its long-term plan.[5] Health coaching, self-management education and peer support will be designed to improve the skills and confidence of patients and enable successful adherence to treatments. The NHS estimates that implementing self-management practices could see the need for GP appointments fall by 9% and emergency appointments by 19%.[6]

In the US, the American Medical Association has established a variety of resources aiming to improve dialogue between patients and healthcare workers, such as the "patient experience programme".[7] The programme collects patient feedback on all facets of care and uses it to update processes causing issues.[8]

Supported self-management is likely to lead to more engaged patients who are keen to adhere to treatments and make meaningful lifestyle changes, reducing the need for further interventions by healthcare professionals. In turn, this will reduce the burden on healthcare systems and free up valuable time and resources for use elsewhere. Patients with more awareness of their treatment, its duration and the range of possible effects will have greater confidence, improving health-related behaviours, as well as their overall physical and mental wellbeing.[9] A recent study found that diabetes patients who received education on self-management were 2.5 times more likely to engage with these practices. These patients are then 1.5 times more likely to manage glycaemic levels effectively.[10]

GAPS IN SELF-ADMINISTRATION SUPPORT

Successful self-administration of medication relies on clear guidance for the patient, as well as healthcare professionals having time to respond to queries, address concerns and discuss how the patient can integrate their treatment into their daily routine. However, this may be difficult for healthcare professionals to provide due to their busy schedules and the time-sensitive nature of appointments with healthcare professionals may discourage patients from raising issues they are facing.

A study of patients who have struggled with self-injecting showed that only 50% had received a visual demonstration of the injection process from a healthcare professional. As few as 13% were able to demonstrate the process themselves to a professional and receive immediate feedback.[11] Pharmaceutical and drug delivery providers are beginning to step in and fill the void to provide patients with information about their conditions and how to implement and maintain good, consistent self-administration practices. Additionally, adherence monitoring, helplines, assistance with payments and more are being provided – allowing for faster detection of any problems.

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MEDICAL DEVICES – ADAPTING AND INNOVATING

While setting standards and providing education for self-treatment is important, it must be paired with the provision of drug delivery device designs that cater for increasing self-administration. Recognition of this has led to many companies moving away from traditional vials and syringes to focus instead on developing drug delivery devices that are easy to use and reduce the risk of needlestick injuries. This includes a host of devices, including prefilled syringes, pen injectors and autoinjectors. The challenge for the makers of these products is tweaking designs to keep up with innovations in the drug formulation world while still creating the best user experience possible.

In recent years, there have been widespread changes to the traditional design parameters of drug delivery devices. There is a growing trend towards higher subcutaneous injectate volumes with more devices accommodating 2.25 mL prefilled syringes – with 3mL (and greater) volumes a distinct possibility for the future. A significant factor contributing to this increase in drug volumes and viscosities is the pharmaceutical industry's effort to reduce injection frequency, thereby easing the burden on self-administration patients.

While this trend may alleviate one concern for patients, it can create new difficulties, such as increased hold times during administration, that may prove uncomfortable for some patients and impossible for others. Development of 34G needles, degradable micro-needles and thin wall needles are a few examples of how companies can accommodate greater volumes and flow rates without increasing pain on injection.

Continuing development of biologics and biosimilars, plus drugs with multiple dosages, may see pharmaceutical companies prioritise platform devices that can be easily adapted to accommodate a variety of fill volumes and ensure products get to market promptly. In the competitive pharmaceutical industry, supporting lifecycle management and improving the usability of a device can be a differentiating factor for companies attempting to maintain or increase market share.

CONNECTIVITY – A KEY TO THE FUTURE

Connectivity is another area of exploration for companies looking to make their drug delivery devices suitable for the future. A range of data can be gathered, from basic date and time of injection to more specialised information on drug temperatures and checking for expiry. This data can then be relayed to clinicians and/or patients, enabling them to make modifications to treatments if appropriate.

Following covid-19, a wider range of patients may be willing to engage with connected devices, as the pandemic forced less tech-savvy members of the population to use digital applications and gain experience of remote consultations with healthcare providers. In fact, medical device manufacturers such as Abbott (IL, US) are seeing a chance to market connected products directly to consumers. The company's "biowearables" line will monitor glucose, ketone, lactate and possibly even alcohol levels, allowing users to monitor aspects of their general health and make lifestyle adjustments before medical issues arise.[12]

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It is certainly conceivable that digital health could become popular in the consumer market and encourage more widespread personal health and wellbeing monitoring. This has already been demonstrated by the recent boom in smartwatches associated with the adoption of health features.[13] While there are a host of exciting possibilities associated with connectivity, it is imperative that firms prioritise simplicity in device design and ensure a patient-centric approach, otherwise any new innovation may be lost on many users and ultimately not provide the return on investment.

CONCLUSION

Creating a healthcare system that is better able to support self-management and self-administration has a host of benefits. An ageing population is likely to increase dependence on healthcare services, so freeing up valuable time and resources is crucial. Introduction of self-management standards and better training around self-administration of therapies must be supported by medical device design.

A user-centric approach must be prioritised, especially when introducing more complex elements, such as digital health and connectivity. The pharmaceutical industry can also pick up some of the burden of training users to relieve overstretched healthcare services. Future devices may ease these pressures, as smarter products allow better collaboration and help to keep people well informed about their own health.

ABOUT THE COMPANY

Owen Mumford is a major healthcare company and device manufacturer that commercialises pioneering medical products in its own brand and custom device solutions for the world's major pharmaceutical and diagnostic companies. Owen Mumford's goal is to enhance access to diagnostics, encourage adherence to treatment and reduce healthcare costs, making a world of difference to a world of people.

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ABOUT THE AUTHOR

Michael Earl joined Owen Mumford as Director of Pharmaceutical Services in November 2020. He was previously the Commercial Vice-President at Bespak (now part of Recipharm), leading the commercial team there to drive growth in its substantial medical devices business. Prior to that, he worked for a number of pharma, biotech and device companies. In a career spanning 35 years, Mr Earl has been responsible for all aspects and stages of drug and device development and commercialisation. He has also completed a substantial number of commercial, licensing and mergers and acquisitions transactions.

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