

# Shared Care: Strengthening Self-management Support for Chronic Patients

In recent years, converging healthcare trends have been creating more empowered patients. Before the pandemic, patients could already monitor their own condition through connected devices such as glucose monitors for diabetes. Self-administration of injectable medication had become more prevalent; the development of biologics for subcutaneous administration coincided with the need to treat rising cases of chronic diseases, and an ageing population presenting comorbidities. In the UK, people aged 65 and over are projected to make up 24% of the population by 2043.<sup>1</sup> 15 million people in England have long term conditions,<sup>2</sup> constituting approximately 26.5% of the population but absorbing 70% of acute and primary care budgets for their treatment and care.<sup>3</sup> The possibility for patients with rheumatoid arthritis, multiple sclerosis or Crohn's, for instance, to inject medication on their own, is therefore highly beneficial for healthcare services.

The pandemic further highlighted the value of enabling self-monitoring and treatment. Care for chronic patients was disrupted as healthcare systems dealt with the immediate pressures of containing the outbreak. This shift in attention also created a backlog of patients needing diagnosis or follow-up.<sup>4</sup> Healthcare systems and patients were forced to trial remote consultations in a short space of time, revealing the possible advantages of integrating telehealth into everyday care. In a 2021 survey of almost 3,000 clinicians globally,<sup>5</sup> 49% agreed the majority of healthcare will be provided in a patient's home in 10 years' time. A significant 86% believe the rise of informed patients is driving healthcare change, while almost two thirds (62%) believe the role of the clinician will change to be more of a partnership with the patient in the future.

## Person-centred Care

Patients may spend more time self-managing their condition than with health and care professionals. Activities such as health maintenance, illness prevention, monitoring

and management activities<sup>6</sup> are likely to be predominantly carried out by patients, carers and community professionals. Without proper and ongoing access to support, these self-care activities may not be carried out optimally. Patients who inject, for instance, may suffer from anxieties or even phobias, discouraging long-term adherence to their treatment. A number of studies cite poor medication adherence among diabetes patients,<sup>7</sup> attributed to patient demographics, beliefs and perceptions, but also non-patient factors such as a lack of integrated healthcare.

In Europe, the first ever standard on patient participation in person-centred care was published in 2021, following a four-year long discussion process. The standard serves as a guide for implementing person-centred care, but the writers also envisaged that it could be used to support health and care actors, patient organisations, researchers, businesses and other participants in a number of different ways.<sup>8</sup> The standard represents an important step in improving understanding of what is meant by person-centred care and implementing collaborative practices on a wider scale. For its part, the UK's National Health Service commits to shifting to more 'person-centred care' rather than a one-size-fits-all approach in its Long Term Plan.<sup>9</sup> An essential component of this is supported self-management, where interventions such as health coaching, self-management education and peer support are systematically used to increase the knowledge, skills and confidence a patient has to manage their own health and care – referred to as 'patient activation'. The NHS model estimates that the recommended model of supported self-management could achieve 9% fewer GP appointments and 19% fewer emergency department attendances.<sup>10</sup> The American Medical Association has created a range of resources to enhance patient communication and patient-centred care, including toolkits on health coaching, building a patient experience programme, and empathetic listening.<sup>11</sup> However, a shift in healthcare models may be needed to facilitate implementation of this advice.<sup>12</sup>

## Self-care & Adherence

A more collaborative relationship between

healthcare practitioners and patients can have far-reaching benefits. If patients are more engaged in the treatment of their own condition, rather than the passive recipients of advice and prescriptions, they are more likely to adhere to treatment<sup>13</sup> or even make lifestyle changes to support treatment. This potentially reduces the need for further, more serious, interventions later on, and ultimately reduces some of the burden on healthcare systems, freeing up strained resources. Studies across multiple conditions demonstrate that effective self-management support can strengthen patient confidence in their ability to reach specific goals, improve health-related behaviours and, as a result, overall health.<sup>14</sup>

One study found that people who had received diabetes education were 2.5 times more likely to perform self-management and those who practiced self-management were 1.5 times more likely to achieve target glycaemic values.<sup>15</sup> A complicating factor is the presence of multiple conditions, as more tailored support may be needed. Older patients, for instance, are more likely to have multiple illnesses, and cognitive or physical impairments that affect their ability to treat themselves. Depression is also prevalent among diabetes patients and may affect their approach to self-care. Providing self-care support to sufferers of depression has been found to improve their confidence in managing their conditions and to maintain lifestyle changes, even in times of stress. More efficient self-care then leads to improvements in depression.<sup>16</sup> However, further research on self-management support is needed since, in practice, it is still not widely implemented,<sup>17</sup> perhaps due to a lack of training, resources and time among healthcare professionals.

## Supported Self-administration

Key to delivering collaborative care is self-administration of medication, where patients are able to administer their own treatment outside of the traditional healthcare setting. For self-administration to be effective, patients need support in the initial stages, as they become accustomed to their treatment. Healthcare professionals may have limited time with each patient, and may also be lacking sufficient guidance on



how to train patients, as well as the need for follow-up consultations and interventions. A study of injection-naïve patients found that only 50% reported receiving a visual representation of the self-injection from a healthcare provider. 13% reported having the opportunity to demonstrate the self-injection process on themselves in front of their healthcare provider and to receive feedback.<sup>18</sup> From the patient perspective, fixed time slots with their general practitioner or consulting professional may discourage them from sharing concerns or asking questions. To help address this issue, pharmaceutical and drug delivery device providers are providing training to educate patients about their disease and its treatment. Companies are providing holistic patient service packages and resources based around a drug and where applicable its delivery device. As well as training, this includes adherence monitoring, helplines, assistance with payment, patient stories and more. This approach can allow faster detection of any issues, since patients may have more time with a trainer, or easier access to specific support.

### Innovation in Drug Delivery

To facilitate self-administration of medication, pharmaceutical companies are increasingly moving from syringes and vials to drug delivery devices which have more patient centric designs. Auto-injectors have been in common use since the mid-80s and the rise in self-administration is fuelling further demand for injection products that are accessible, intuitive and designed to reduce the risk of needlestick injury. In 2021, the global subcutaneous drug delivery devices market was estimated to be worth US\$ 25.53 billion, and is expected to grow to over US\$ 56.9 billion by 2030, a CAGR of 9.3%.<sup>19</sup> This market includes devices such as prefilled syringes, reusable and disposable pen injectors, and auto-injectors. Designers of delivery devices also have the challenge of keeping up with innovations in drug formulations, as pharmaceutical companies do their part to improve the injection experience. Intravenous drugs that are typically administered in acute care are being reformulated for subcutaneous preparations. In one example, Neulasta

(Pegfilgratim) was made available to cancer patients in a formulation for subcutaneous delivery, reducing hospital stays and clinic visits. Additionally, more concentrated biologic formulations are being developed to reduce the frequency of injections, but these may require modifications to device design in order to accommodate higher viscosities.

Traditional design parameters for subcutaneous delivery devices are no longer appropriate for biologics that are higher in viscosity or volume. Injectate volumes have already moved from 1mL to include 2mL, but larger volumes – over 2mL and even over 3mL – could become possible in future. New excipients that numb the injection site and dilate the injection area could make the administration of larger volumes more comfortable. This introduces a new challenge, however, since higher volume syringes are required, and patient hold times during administration may be prolonged beyond a comfortable duration. Sophisticated advancements in needle technology include near invisible 34G needles, degradable micro-needles and thin wall needles, where the outer diameter is reduced with no change to the inner, thereby accommodating higher volumes and flow rates without increasing pain. A further solution to reduce injection time and frequency is long-acting or extended-release formulations. As formulation scientists may make changes to a drug during development and through commercialisation, pharmaceutical companies may favour a platform approach to delivery devices in order to reduce risk and complexity and ensure speed to market. Platform delivery devices aim to accommodate a variety of fill volumes, and can be adapted to include new features, while preserving the original design and maintaining optimal ease of use and patient familiarity. In an increasingly competitive market for injectables which includes growing numbers of biologics and biosimilars, improving user-centric designs offer pharmaceutical companies a differentiating factor for their combination products.

### Digital Opportunity

The introduction of digital capabilities to drug delivery devices could further enhance patient engagement in their treatment and drive adherence. The connected medical device market is expected to register a CAGR of 18.92% from 2022 to 2027.<sup>20</sup> Data generated by digital devices may include basic date and time of injection as well as more detailed information such as drug



temperature and expiry checks. Through this data, clinicians can gain an insight into the efficacy of treatment for a patient and make tailored adjustments. There may be greater appetite for this following the pandemic, since patients who were not previously accustomed to digital applications began using them out of necessity, and may now be more receptive – if the benefits are compelling enough. Companies are also seeing an opportunity to market digital health products to consumers, blurring the lines between patient and consumer. The medical device company Abbott, for instance, is using its expertise in glucose monitoring to launch a range of ‘biowearable’ health devices for consumers. The new line could encourage consumers to take preventative measures for their health. By tracking key biomarkers in the body, such as glucose, ketones, lactate, and eventually alcohol, users will be able to better understand their general health and take action.<sup>21</sup> If such devices take off among the wider population, this could make self-care a more attractive concept. We may also see the trend work in reverse, with drug delivery devices for patients being designed in a more consumer-oriented fashion. Ultimately, though connectivity offers exciting possibilities, its benefits cannot be achieved if devices are not intuitive and convenient and maintain simplicity for the patients that use them. Additionally, the cost and risk of securing data privacy must be given serious consideration.

### Removing Obstacles

The benefits of supported patient self-care and self-administration are clear. However, for wider implementation, healthcare

professionals may need additional resources and the scope to put person-centred care into practice. Industry can support this shift, by creating user-centric, intuitive products that facilitate self-administration of medication, giving patients greater control of their own treatment. Pharmaceutical and drug delivery device businesses can also provide support and training, easing some of the pressure on healthcare services while ensuring that their products are being used optimally and producing the desired outcomes. Increasingly sophisticated digital tools could create new possibilities for collaboration between patient and healthcare professionals, with patients increasingly informed about their own health, and therefore more engaged.

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**Michael Earl**

Michael Earl joined Owen Mumford as Director of Pharmaceutical Services in November 2020. He was previously the Commercial VP at Bepak, leading the commercial team there to drive growth in their substantial medical devices business. Prior to that, he worked for a number of pharma, biotech and device companies. In a career spanning 35 years, he has been responsible for all aspects and stages of drug and device development and commercialisation. Michael has also completed a substantial number of commercial, licensing and M&A transactions.