Applying Consumer Engagement Strategies to eClinical Technology

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A proliferation of new and novel advanced therapies has created a need for more flexible, adaptable solutions to traditional paradigms, while the COVID 19 pandemic created a backlog in the development of promising drugs and limited or inhibited patient participation in clinical trials. Patient-centric trials, like decentralized clinical trials (DCTs), have emerged as possible alternatives to the traditional clinical trial model, replacing some on-site visits with telemedicine and remote technologies.

Clinical trial sponsors may choose to employ virtual and remote technologies in patient-centric clinical trials in order to support their outcomes, but these solutions frequently do little to promote patient engagement or retention. Ensuring patient participation and retention is an issue in the clinical trial space that predates the pandemic. Regardless of a trial's design or level of reliance on eClinical technologies, having underdeveloped, clunky virtual tools to support patient participation can serve to create cost and time delays through attrition. Optimizing these tools to maximize patient engagement is one of the primary ways clinical trial teams can improve patient adherence and retention, improving trial outcomes, and paving the way for new and promising therapies.

Accessibility issues impacting both patients and providers, coupled with a reluctance to revisit the protocols and controls that have been well-codified over decades of research, have served to slow the adoption of remote and virtual technologies for the clinical trial space. The limitations of DCTs for certain applications, patient populations, and trial parameters have tempered the initial excitement surrounding the concept; more recently, many in the clinical trial space have begun to explore the benefits of hybrid trials, which combine many of the established advantages of a brick-and-mortar trial site with digital tools that can improve tracking, bolster communication, and improve data breadth and depth.

The need to modernize the technologies and protocols at the heart of patient-centric trials is evident. For those already pursuing these types of trials, the technologies supporting remote engagement have largely remained unoptimized for ease of use, creating a disconnect between providers and patients that can jeopardize a patient's experience, rather than enhance it. Industries that focus on providing applications to the consumer market have long been masters at engaging, incentivizing, and motivating customers. Companies such as Peloton®, Apple®, Duolingo™, and Fitbit® leverage behavioral science principles to influence consumer decision-making and keep users engaged with their products. These companies have a deep understanding of what makes their customers tick, what their expectations are, and what their preferred experience is, and this insight drives innovation.

On the other hand, the eClinical technology industry is in its infancy when it comes to using these behavioral techniques while designing applications for patients involved in clinical trials. As a result, these technologies largely lack the immediacy, accessibility, and engagement of more commercial products.

Improving Patient Engagement with Long-Standing Consumer Strategies

When it comes to patient engagement, the experience and technology gaps apparent in the clinical trial space have resulted in a lag for virtual technologies designed to offer comparable functionality to those pioneered by other sectors. In the consumer market, engagement through technology means allowing customers to set their own goals, overcome challenges, receive real-time feedback, and make transparent progress. Anyone who uses an Apple Watch® or FitBit® is intimately familiar with these techniques as they "close their rings" or reach their "10,000 steps."

The technology gaps within the clinical trial space have the potential to impact patient perception and adherence, as trial participants accustomed to the apps and wearables that support other aspects of their daily lives become frustrated or disconnected with eClinical technologies. Although these considerations may seem tertiary for some drug developers and trial sponsors, their potential impact on a trial is multifold. eClinical technologies have the potential to transform the clinical trial paradigm if the accessibility, data quality, and immediacy afforded by these solutions are coupled with improved adherence.

To achieve this requires a focus on the behavioral science approaches that drive user engagement. Simplification and personalization are two of the biggest drivers of this design: configurable reporting tools, tailored to a patient or patient population, have the potential to transform how and when a patient inputs information. Add machine learning (ML) elements to this equation to adapt to user preferences and the benefits begin to compound, building trust among participants and streamlining the trial experience. This trust component will be particularly crucial for patient-centric trials that, by their very nature, are likely to include less one-on-one interaction between patients and providers.

A modern, consumer-grade UX design is the foundation for driving greater patient engagement. Ensuring that this design incorporates dynamic personalization features (i.e., that personalize the patient experience based on behaviors, cultures, and languages) will afford accessibility across regions and populations, an important feature for sponsors trying to reach underrepresented populations and underserved communities. By creating user platforms that maintain and enhance the patient-provider relationship and that can be configured to overcome language barriers and improve communication, trial sponsors can achieve better adherence, more accurate data reporting, and improved troubleshooting.

Key Behavioral Science Principles to Transform Clinical Trials

The value of applying consumer engagement techniques when developing applications for patients has been slow to gain traction in the clinical trial space. There are a number of validated behavioral science principles that could prove highly transferrable for clinical trials, with proven success in other industries and applications. The first is the behavioral contract: in the simplest terms, this represents a verbal or written commitment to engage with and complete an agreed-upon task or program. This validated approach is simple yet effective, increasing the likelihood of a participant adhering to an ask. Another tactic that has resulted in improved adherence in other consumer applications is time management and planning. For many, an upfront understanding of the time and timelines that accompany given requirements of a program increases their likelihood of completing given tasks. Incorporating "challenges" in this paradigm can serve to further incentivize users – laying out the doses for a protocol as individual tasks, tracking those tasks, and rewarding their completion with acknowledgements or feedback can help patients feel more in control and engaged in a trial.

One of the key principles that can improve this adherence is real-time or near real-time feedback from clinicians to patients. The difference between completing a protocol and receiving feedback from a clinician in the same week versus waiting two months for an on-site visit is often significant; faster turnaround times for patient interaction can help participants feel more in control of their progress in a trial. Related to both this and "challenge" principles is the concept of "social proof," one of the most successful behavioral science approaches employed in the consumer world. By tracking a user's progress in relation to other users, eClinical technologies can leverage the social influence of integrating competitive elements to patient participation. While useful, the social proof concept may be more difficult to employ in the clinical trial space, which must adhere to strict regulations around information sharing, but with the appropriate anonymity built in, its utility for encouraging patient engagement may prove significant.

Finally, the concept of "success tracking" holds promise for encouraging greater user engagement for eClinical applications, with similar caveats regarding the level of anonymity required to make this approach feasible. Creating levels of transparency that allow patients to understand and contextualize their progress within a clinical trial protocol is one of the best means of increasing trust and improving adherence, paving the way for patient-centric trials that can achieve the same goals as traditional clinical trials.

Overcoming Hurdles to Enable Progress

While the clinical trial space has plenty of room for improvement when it comes to eClinical technologies, many stakeholders have already begun this work in relation to concepts such as eConsent. While these are important tools that have been operationalized for many clinical paradigms already, the next phases of advancing these technologies will require a more concerted effort from principal investigators, trial sponsors, regulators, and others to identify the engagement points of a trial and determine the eClinical approaches best suited to optimizing engagement remotely.

The other big hurdle for the space will be integrating historically siloed applications. For many trials, eConsent and other technologies like ePRO and eCOA exist separately, alongside additional applications for recruiting participants and performing trial tasks. This approach creates distance and complexity for those engaging with it, particularly patients, who are typically unaccustomed to both clinical trial protocols and user experiences that are clunky or nonintuitive. By working to integrate these disparate programs and applications into interconnected platforms with a single access point for users, clinical trial sponsors can create a more simplified, functional tool for tracking patient participation.

Meeting patients where they are and affording them a streamlined, positive experience will be critical to advancing the concept of patient-centric trials. It will also serve to open certain trials to a more diverse patient population and to give greater access to patients from underserved populations, including rural areas and minority communities. Doing so will require a commitment to accessibility – many rural areas, for example, may have issues surrounding internet access, so enabling eClinical technologies that can record information offline to sync later will help enable those patients to participate in greater numbers. Likewise, focusing on the permissions and technologies necessary to support participants who cannot track their own progress, often through enabling proxies, will be important to supporting equity for the clinical trial space.

Ultimately, patients have come to expect consumer-grade quality across their virtual experience. Facilitating this quality in eClinical applications has the potential to revolutionize the clinical trial space, helping sponsors better understand patient behavior, drive participation, and improve adherence through proven behavioral science principles.