Aptar

digital health

How Digital Solutions Improve Medication Adherence & Empower Patients to Overcome Anxiety

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A recent report from the U.S. Department of Health and Human Services indicated home health is the site of care that has seen the greatest increase in prescription drug spending, with 95% growth from 2016 to 2021. The increase in drug spending is indicative of a larger trend. McKinsey has **estimated** as much as $265 billion in Medicare spending, representing 25% of the total cost of care for Americans over the age of 65, could shift from traditional sites of care into the home as early as 2025.

For this shift to succeed, care teams need to know that patients' clinical outcomes are progressing as expected. They can no longer wait until a patient comes to the office for a visit to see their vital signs or receive patient-reported outcomes. They need remote monitoring devices and digital health applications to engage with patients. This is especially important when it comes to medication adherence, which is an area where practitioners have little insight into what's happening with patients.

In a recent webinar, Aptar Digital Health and **Noble,** an Aptar Pharma company, discussed how traditional approaches to improving medication adherence have fallen short.

The webinar also touched on the work both companies are doing to address the issue of using digital health solutions – and why this work needs to start with patients.

Medication non-adherence leaves money on the table

Exploring the use of **biologics** in oncology and immunology helps illustrate the importance of monitoring medication adherence.
As the term implies, the components of biologics are not chemically synthesized. These components include sugars, proteins, nucleic acids, or even living cells. Their value in treating conditions such as **psoriasis** is that they are developed to target specific parts of the immune system, rather than the entire immune system.

Joe Reynolds, Director of User Experience and Human Factors at **Noble**, an Aptar Pharma company, noted about 50% of therapies currently undergoing clinical trials are biologics. This isn't surprising, given their potential to target the specific cause of a condition, especially rare cancers or diseases that don't otherwise respond to traditional treatments.
Biologics have significant potential to improve clinical outcomes and change lives – if patients take them. Often, they don't.

Subcutaneous injections and digital solutions - Improving medication adherence

Patient testimonials, industry insights and innovation

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One **study** of more than 2,700 patients taking biologics to treat psoriasis found just 38% of patients were adherent, compared to 46% who discontinued treatment. (The remainder either switched to another biologic or later restarted treatment.) A second **study** found adherence can vary significantly from one treatment to another for the same condition, which suggests many factors influence a patient's decision to stop using a treatment.

Overall, medication adherence rates can range from **40% to 60%**, according to Brian Mason, Director of Global Client Services at **Aptar Digital Health**. When it comes to biologics, the adherence rate is thought to be somewhat **higher**, at 55%. Still, if 45% of patients discontinue treatment, this could contribute to up to $100 billion in potential revenue loss for manufacturers.

Existing practices for training aren't getting the job done

The industry has known for quite some time that the issue needs to be addressed. Medication adherence rates of roughly 50% for patients with chronic conditions were documented in a **1998 study**. Another study carried out in **2012** highlighted the importance of "patient education with behavioral support" in improving medication adherence for individuals with chronic conditions, which is easier said than done: "*Evidence is limited on whether these approaches are broadly applicable or affect long-term medication adherence and health outcomes.*"

Noble, an Aptar Pharma company recently conducted an internal study that surveyed about 300 patients and their providers. Four key findings from the study stood out to Reynolds:

- Due to labor and resource shortages on the provider side, patients rarely receive training in how to self-administer a therapy subcutaneously.
- When training does occur, it's inconsistent and varies in quality from one clinic to another.
- Self-administration at home is an emotional and complex process. in fact, some patients delay biologic treatment for over a year due to concerns and anxieties that in many cases can be overcome with proper training and support.
- Training and engagement are critical parts of improving the patient experience.

"*Ideally, patient engagement consists of hands-on tools and resources, digital components, and a communication model focused on getting the right information to the right patient at the right time,*" Reynolds said.

Patients say self-administration requires education, training

Reynolds said approximately 50% of the biologics on the market today are self-administered at home. Mason said this can be especially helpful for patients who live in areas with limited access to care centers that provide intravenous injections. Additionally, patients managing life-long conditions will benefit from not needing to make frequent trips to the clinic to receive treatments.

On the other hand, self-administration at home doesn't provide the same firsthand insight into medication adherence as a trip to the clinic, where care teams administer therapies to patients. As noted, it also requires a level of patient education that's not necessary for administration in the clinic. This includes topics such as how to store medication, how long to

keep it at room temperature, how to insert it into the injection device, where and at what angle to inject, how long to keep the injector in place, and what to do with the empty injector once the therapy has been administered.

How do organizations identify these patient education and engagement needs, and then address them in the digital health solutions they create? They talk to patients.
"*It's never too early to incorporate the voice of the patient into a development program*," Reynolds said. Ideally, organizations should start at the discovery phase to understand the needs, wants, and preferences of patients. "*Use that information to feed into ideation and concept development around an engagement strategy and digital solution*," he added.

The webinar featured insightful testimonials from two patients: Ann uses an auto injector to administer her treatment for ulcerative colitis. She chose self-injection because frequent visits to a medical facility conflicted with her schedule. Like many patients, Ann feared needles, and she compared her feelings the first time she administered at home to being on a roller coaster: Preparing the medication and the injection site was no problem, "*but the injection itself was a whole other story*," she said. It took 20 minutes to wait and calm down be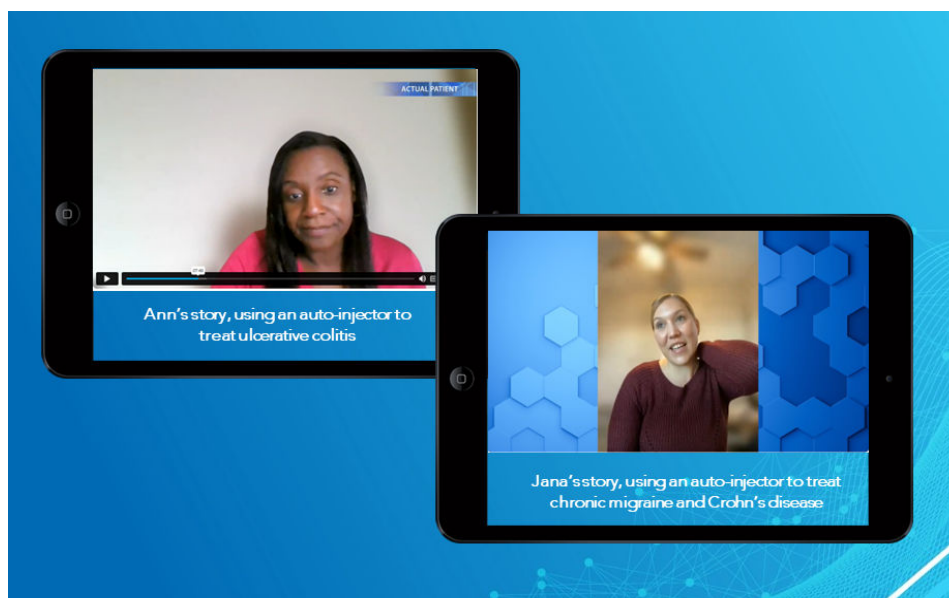fore Ann could push the button to auto-inject the therapy. "*If I had something to simulate the process, then it would have become a more natural thing.*"

Jana uses auto-injectors to treat conditions, one to treat chronic migraines and one to treat Crohn's disease. "*The injections were more complicated than I had expected them to be*," Jana said, in part because each therapy requires a different area of injection, angle of injection, and amount of pressure on the auto-injector. "*A little bit more instruction needs to be given*," Jenna added that medication management can be a challenge. To administer her therapies as prescribed, she needs to receive three reminders at three different times of the month, and therapies must be administered at different times of the day.

Coming together to improve design and create custom solutions

Addressing the issues these two patients raised is at the cornerstone of Noble and Aptar Digital Health, both part of Aptar Pharma.

"*Together we're uniquely positioned in the market to identify patients' needs, wants, and preferences, and then build those out with portfolio solutions*," Reynolds said.

Ann's story, using an auto-injector to treat ulcerative colitis

Jana's story, using an auto-injector to treat chronic migraine and Crohn's disease

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"*Ultimately, we can offer solutions that are built by patients, for patients to address gaps and barriers.*"

Noble has deep expertise in directional testing and design, which validates the efficacy of a solution before moving into formal human factors studies. Aptar Digital Health then filters this information into its digital health platform, configuring and customizing the solution for a specific therapeutic or disease state.

The final product could range from an application that's a little different from what consumers download from an Appstore to a Software as a Medical Device app that has received U.S. Food and Drug Administration clearance or a CE mark from the European Medicines Agency. Various features can be turned on or off as needed: Video tutorials, dosage calculations, calendar reminders, symptom and side effect trackers, and so on.

"*Ideally, through combining elements of features and modules, we can reduce stress for patients and create a more cohesive piece of communication with either the healthcare provider or a patient support program,*" Mason said. "*It allows the monitoring of the patient at home and their situation and ideally improve the compliance in that particular journey – combining all of these features into what is a cohesive experience.*"

AdhereIT, a connected medical device that provides patients with prompts and sensory feedback as they auto-inject therapies. The device walks patients through the process from removing medication from the refrigerator to dispensing it in the right part of the body at the right time to properly properly disposing of their waste. Data collected from the device provides additional feedback to patients – and to Noble and Aptar to influence future design decisions.
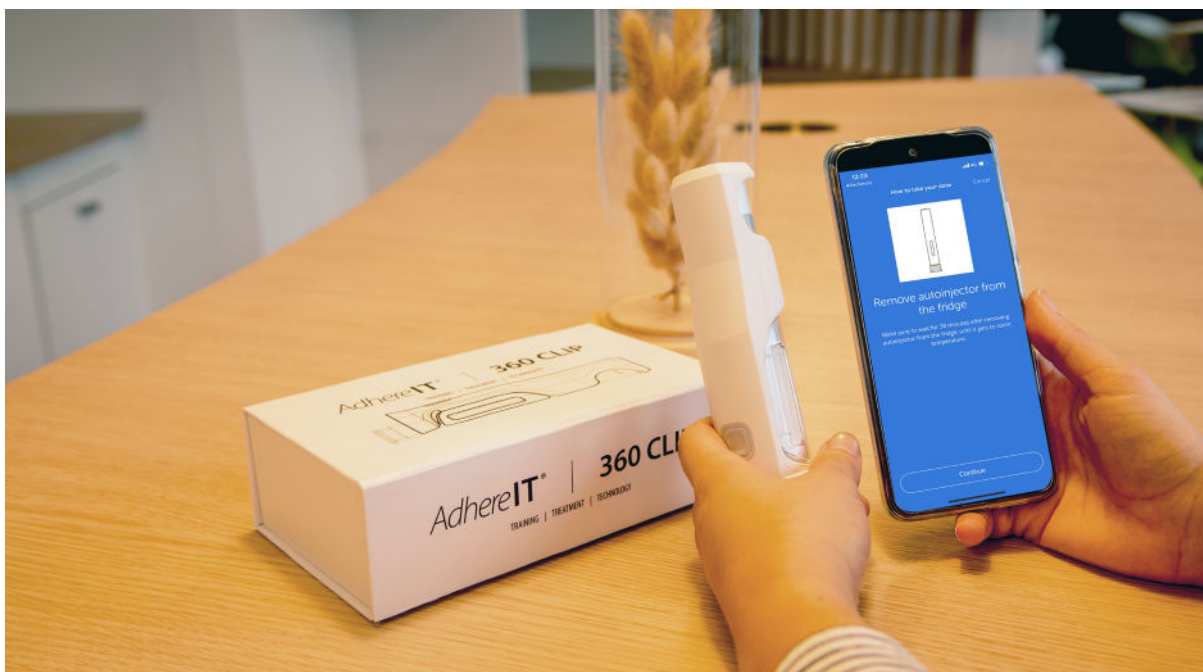
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Results from Aptar latest Patient Engagement Program study

The results of a recent pilot study conducted by Aptar with a specialty pharmacy in the US demonstrate the value proposition of this patient-centered approach to digital health design. The control group received support representing the standard of care, while the intervention group had access to an onboarding and engagement solution.

The results demonstrated an impact on Patient Experience, Adherence and Refill Behavior:

- Patients in the intervention group began their treatments 40% sooner than those in the control group.
- The percentage of days covered for the intervention group was 80% higher than the control group.
- At the end of six months, persistence was 29% higher for patients in the intervention group – a figure that equated to two additional prescriptions.
- In their patient-reported outcomes (PROs), the intervention group reported increased confidence, better preparation, and reduced anxiety.

The results had significant potential to move the needle for both healthcare and life science organizations. "*Imagine an app that's generally available for download and use by any patient going through their own care journey,*" he said. This study highlights that providing additional services such as training kits, onboarding sessions and digital health assets to empower patients can enhance their treatment experience and trigger changes in behavior.

The future state of patient training should be built around the needs of the patient, and requires cooperation from multiple stakeholders:

01 Pharma
02 Noble
03 HCPs
04 Payors
05 Specialty Pharmacy

RESULTS:

38% Improvement in time to first injection administration (*3.5 days sooner*)

15% Improvement in time to ordering first refill

40% Improvement in achieving >80% PDC

29% Improvement in medication persistence at 6 months

About Aptar Digital Health

Aptar Digital Health creates end-to-end solutions to enhance patient experiences every day, leveraging a holistic ecosystem of digital interventions. Amplified by an industry-leading portfolio of products and solutions, Aptar Digital Health's offerings combine mobile and web apps, connected drug delivery systems, onboarding, training and advanced data analytics services to actively empower patients and create a positive treatment journey.

Aptar Pharma's Digital Health division is part of AptarGroup, Inc., a global leader in drug and consumer product dosing, dispensing and protection technologies.

Ready to take the next step? Contact us to discover how we can enhance the patient experience undergoing self-injection treatment.

Contact Us!

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