The virtual squirrel helping the youngest patients to stick to the plan

By The Engine Room
Wednesday 10 April 2019

DataArt's R&D technology professionals are continuously looking for gaps and challenges in the healthcare and life sciences industry. Following our last catch-up with the team, Ivan Pantykin, Head of European Healthcare & Life Sciences tells us what they're working on now

KidPRO is a POC (Proof of Concept) developed by DataArt as a complete patient engagement solution that helps paediatric patients undergoing treatment or participating in clinical trials. The solution consists of two interconnected applications, one for the child and one for the parents. KidPRO combines professional medical software with gamification elements that are attractive, easy-to-use and rewarding for children and their parents. An animated cartoon character – a digital friend – interacts with the child user by guiding them throughout their journey. This friend helps the child to stay engaged long-term, which is crucial both for clinical trials and when treating chronic diseases.

The recent recognition of KidPRO at the M&K Awards 2019 in Germany, which highlights the significant advancements made in the eHealth market, made us revisit our idea and think about what it is that makes this PoC stand out.

Patient centricity in action

The main goal driving KidPRO is to address the absence of ePRO (Electronic Patient-Reported Outcome) solutions for children with chronic diseases. Indeed, it is difficult to imagine a traditional ePRO system working efficiently, and with no assistance from adults, in cases where a child undergoes a clinical trial or a long-term treatment plan. We set out to address this core issue and asked – how can we possibly turn a clinical trial/treatment into a fun experience that would lend itself to compliance?

Our initial research confirmed that there were no children-targeted ePRO systems out there. We decided to try and close this gap, and the most innovative thing about the app is that it actually sets the focus on children themselves. The app combines pieces of professional medical software and, because of its flow – gamification elements and a simple UI – it is all about supporting children throughout their recovery process.

Data collected from clinical trials needs a high level of accuracy, as it is a vital factor in the discovery of new treatments. Collecting data from medical devices via a camera and computer vision technology ensures that the Study Team receives comprehensive data, eliminates human error, and makes it even more engaging for children.

Motivation

Gamification is a key element of KidPRO and acts to keep children engaged and motivated. The digital friend known as 'the squirrel', is designed to guide children both through a clinical trial and a long-term treatment. The interactive squirrel helps the child with their daily schedule, suggests personalised educational content and rewards for compliance.

Travelling the treatment journey 'together' with the squirrel comforts and reassures the child so that they feel they are never alone, thus building an emotional connection which is invaluable in helping to combat the stress that a treatment can cause.

Education, education, education

Having initially developed KidPRO as child and clinician-facing, the KidPRO PoC, was upgraded to include Care Companion – a feature this time aimed at parents. Care Companion helps parents stay on top of their child's health. The application captures digital readings, gathers daily statistics and progress through a history of vital indicators about the child's condition, and reports it to the parental application. This information provides the parents with relevant information and recommendations about different treatment stages and helps them to educate themselves on their child's condition, preferred lifestyle, and to prevent events that might lead to a relapse. The app also reminds the parents when their child needs to take medication and have scheduled doctor visits, helping to reduce the number of risk factors. In short, Care Companion helps maximise health outcomes by self-education and continued monitoring.

What the future holds

We strongly believe that today's healthcare journey needs to be human-centred, aligning with one of the biggest trends in the growth of telehealth – remote treatment and patient monitoring. Telehealth is evolving at a swift pace, and engaging participants across the healthcare spectrum is emerging as the new paradigm. With its rapid market growth, telehealth

is expected to continue expanding as it tackles some of the most important challenges in healthcare today: access to efficient care, cost-effective delivery, and the move to increased patient-centricity.

Telehealth is set to improve the quality of care both in short- and long-term treatments. In this context, we see a lot of potential for KidPRO. KidPRO already has a full feature set that makes it possible for doctors to remotely monitor a child's actions, the frequency of those actions and their overall adherence, and to remotely assist (where necessary) the child via their digital friend. We are now moving towards developing a similar feature set to that of Care Companion, but this time designed for use by a doctor. The new feature set will allow doctors to monitor their patients in real time, to contact them and to inform their parents when needed. This will enable us to implement the telemedicine part of the concept, which in turn will help further development.

The recognition and validation of the concept gained from the results at the M&K Awards 2019 in Germany was a significant impetus for us to carry on with further testing on real data. We now hope to test our solution on clinical data under real operational conditions and to receive guidance from app users on further development. Treatment adherence is an important issue in healthcare, and there is a fundamental need to have a product that will help solve the challenges for the youngest patients.

For more stories about DataArt's innovations, click here and here.

Ivan Pantykin

Original publication: https://medtechengine.com/article/the-virtual-squirrel-helping-the-youngest-patients-to-stick-to-the-plan/