How Medisafe is using AI to improve patient adherence

blue latitude°
health

Using AI to improve patient adherence

By Dina Patel, freelance journalist

Dina Patel speaks to Omri Shor, Co-Founder and CEO of Medisafe, to find out how his medication management app is tackling the problem of poor adherence.

Seventy-five percent of Americans have trouble taking their medicine as directed. This non-adherence to prescribed medicines is causing 125,000 deaths a year. Economically, this costs the United States between $100bn and $300bn annually.

Meanwhile, in the UK, it has been estimated that £300m worth of NHS prescribed medicines are wasted each year, one reason being that patients intentionally or unintentionally fail to adhere to instructions.

The World Health Organisation (WHO) estimates that by 2020, chronic diseases will account for almost three-quarters of all deaths worldwide. In particular, WHO predicts the number of people in the developing world with diabetes is set to increase from 84 million in 1995 to 228 million in 2025. A number of these patients will not take their medication correctly and this will have a detrimental impact on their health, proving the gravitas of this issue.

Omri Shor, Co-Founder and CEO of Medisafe, a personalised medication management platform, tells BLH how the organisation is making it easier for patients to efficiently and effectively track their medications.
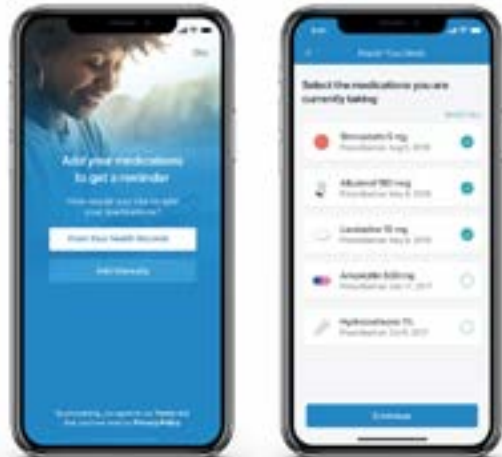
HOW DID YOU COME UP WITH THE IDEA FOR MEDISAFE?

OS: Back in 2012, my father – who is diabetic – came to me with a question, which was "have you seen me inject my insulin?". I gave him a quick answer, "no, I haven't seen you take your insulin." Unfortunately, he took it to mean, "no, you haven't injected your medicine." The outcome of that was he double dosed on his medications. This could have been fatal but fortunately for us, he is still with us today.That's when my brother and I decided we were going to try and solve the problem. We started Medisafe to help my father and many others. At the same time, our vision is also to empower individuals to improve their health using technology, and to help our partners – the pharmaceutical companies.

Like my father, 700,000 people a year in the US will underdose or overdose on medication. This is the huge problem. Of those 700,000 people, 125,000 people will die every year. Every four minutes an American will die from misusing medication. We're solving this problem by using Artificial Intelligence (AI) to personalise medication management for individuals.

There are many reasons why people don't take their medication – from 'I don't want to feel sick', to 'I don't trust the doctor', 'I don't want to put chemicals into my mouth', 'I don't trust the pharmaceutical company', or 'I forgot to take it'. To solve this, we create a profile, and we deliver a set of interventions for every person who uses our platform.

WHAT DID THE PLANNING STAGE FOR MEDISAFE INVOLVE?

OS: I spoke with everyone across the industry and with many patients. I interviewed pharmaceutical companies to try and analyse the problem of medication management and understand how we can solve that problem for people on a larger scale. We have a behavioural scientist on the team who, with the group in charge of user experience, interviewed patients. We agreed that the first stage for the company was to design a socially enhanced medication management platform that would remind you to take your medication. If you don't do that on time, it will notify a designated family member, spouse, or whoever the patient chooses. That was the first step, and after we had proven it worked, we sought to raise money and continued from there.

Omri Shor, Co-Founder
and CEO of Medisafe

WHAT ROLE DOES ARTIFICIAL INTELLIGENCE (AI) PLAY?

OS: We use algorithms and micro-segmentation to analyse how people take their medications and why they don't take them. We then AB test different engagement approaches through the Medisafe platform to see what works best to motivate people to take their medication and increase their adherence. All of this is enabled by machine learning and AI.

DOES THE TECHNOLOGY HAVE THE POTENTIAL TO CHANGE THE WAY WE INTERACT WITH PATIENTS?

OS: Yes, but it's not 'potential' anymore, it's doing that today. At Medisafe, we just celebrated reaching five million users, so imagine you needed to hire enough nurses to care for five million users, all across the world, and speak to them about the importance of medication management. Is that do-able? Absolutely not, the cost would be outrageous, but we can do that using technology.

WHAT CHALLENGES HAVE YOU ENCOUNTERED WITH USING AI?

OS: AI needs data. At the beginning you have the chicken and egg problem – we need enough data for the model to be able to run and build efficiency, but you don't have people or data. It takes time to build that and understand what works and what doesn't. In healthcare you also can't let a machine run completely autonomously, you have to control it.

HOW DID YOU INTRODUCE THE IDEA TO THE HEALTHCARE INDUSTRY?

OS: Most companies start with the B2B side, talking to the industry and thengoing to the patients. We went the other way. We started with the patients, and after we had hundreds of thousands of patients, we introduced it to the healthcare industry.

HOW DOES YOUR TECHNOLOGY IMPROVE THE PATIENT EXPERIENCE?

OS: Patients may not remember exactly what the doctor said about their medication, particularly if it was a stressful conversation. Medisafe tries to simplify this problem for patients. Instead of trying to remember what you are supposed to do, the platform engages with you on a daily basis and reminds you of what you need to take and when. Then we build more layers – we educate you about your condition, about your medications, what they're doing for you, and we connect you with your family members. We create a network for you, so you never forget to take your medication. Through Medisafe your medication history is only one click away, which is very convinient for a doctors visit.

Most companies start by talking to the industry... We started with the patients

WHAT KIND OF INSIGHTS ARE PROVIDED BY THE DATA ON THE MEDISAFE PLATFORM?

OS: We are capturing data for each and every patient. We collect all the data and we start building insights and knowledge based on those understandings. An example of this would be when we identified that 25% of patients were taking a drug for asthma in the morning and 75% of patients were taking it in the evening. The drug should have been taken in the evening. This meant 25% of patients were taking it at the wrong time.

Some of the patients that took their medication in the morning told us they thought their prescriber had told them to do that. That's probably not the case, and they might be confused. Thirty-five per cent of patients said they take it at the wrong time because it's more convenient for them. We found out that if patients were taking the medication in the evening, they had 30% less asthma attacks. If patients knew the clinical outcome, it would probably change their behaviour.

WHAT HAS BEEN THE HIGHLIGHT OF THE JOURNEY SO FAR?

OS: This past year was truly wonderful for us in terms of consumer growth. Medisafe is rated 4.7 out of 5 stars by 200,000 patients on the App Store.

One patient said: "I wanted to take a quick moment and thank you and your group for presenting a product to the world that persists in the maintenance of good health. I can tell you that without Medisafe I would be lost. It is a perfect tool for someone with a busy lifestyle. Thanks a million." We get this type of feedback each and every day. We received another review three days ago and the headline was "life changing".

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