## FIRESIDE CHATS

# Improving Healthcare Delivery Through Patient Involvement

DrugBank is a widely used data source for companies working in the pharmaceutical, healthcare, and technology space. The data integrates seamlessly into in-house products, to enhance outcomes for data-driven decision-making.

Thrive Health uses DrugBank's structured data to power their healthcare platforms, applications, and software tools aimed at improving healthcare delivery by engaging with patients.

We chatted with co-founder and CEO David Helliwell about Thrive Health, the company's involvement in COVID-19 solutions, and where they expect to be in a few years.

**thrive health**

David Helliwell
**CO-FOUNDER, CEO**

**ABOUT THRIVE HEALTH**

Thrive Health was founded to fundamentally improve the delivery of healthcare in Canada and around the world.

They are a software company with a mission to support patients in their advocacy for better health, clinicians in delivering excellent care, and the health system as a whole. They want people to thrive, mentally and physically, as they go through a healthcare journey and in their daily lives.

**WEBSITE**
thrive.health

**INDUSTRY**
DIGITAL HEALTH

**USE CASE**
ELECTRONIC MEDICAL SOFTWARE

### Can you tell us a bit about yourself and your journey?

I guess I'm a bit of a serial entrepreneur, but before I became an entrepreneur, I was a geophysicist, working for oil and gas in Alberta, gold in Australia, and diamonds in northern Canada, and pulled into Mexico as well. I also competed in professional windsurfing races around the world in the nineties.

After that, I spent some time as a strategy consultant based in Paris. I also served as the Director of Policy for a cabinet minister in Ottawa for a few years.

In 2006 I started my first tech company. It was a software company called Pulse Energy, which focused on energy intelligence for buildings. We grew the company until we had about a million businesses around the world using our platform, and then we sold in 2015. That gave me a chance to take a sabbatical in 2016, and then in 2017 we started Thrive Health.

## What does Thrive Health do?

Thrive Health was started to help patients not get lost between the cracks in the healthcare system, particularly around surgical care or seeing specialists. Thrive was founded to empower patients to play a more active role throughout their health journey, and reduce the communication gaps in care. By keeping patients in the loop while helping specialists and their staff to do their work more efficiently is helping not only to reduce wait times but to ensure patients are prepared for important health events and have a better recovery experience. By measuring and enhancing happiness of patients and caregivers, we're changing the definition of what healthcare looks like in Canada.

## What is Thrive's focus right now?

We've had a large uptick in user numbers through COVID-19, because we've repurposed our platform to become the Canada COVID-19 platform in partnership with Health Canada. We've had about ten million users across Canada, which is around twenty-five percent of the total population. Essentially the platform is helping government public health organizations keep Canadians informed of what's going on with COVID-19, and also helps with symptom tracking for people across the country. They can get early warning signs of where new outbreaks may be happening. There's also information on how well measures are working in different provinces, regions, and neighbourhoods.

Our team is working with some excellent data related to symptom tracking across the country, and we're actually seeing a ten to fourteen-day advance warning through our tracking data, before the positive COVID results show up in the production testing.

## You're having a really positive impact on a very important problem affecting the globe. Data is extremely important to the COVID platform and your other platforms. What aspects of data are important to you and why?

It's all about the depth and breadth of data we get from a whole bunch of different sources. A big part of ensuring breadth and depth is collecting data throughout a patient's journey—it shouldn't just be tied to one health experience. There's a ton of data out there, with doctors having an electronic medical records system, and hospitals having electronic health records systems, but they don't really talk to one another.

## How do you deal with the potential of inaccurate self-reported data? What are some of the techniques you use to really understand that data and make it useful or insightful?

If we have hundreds of thousands, if not millions of people inputting data, even if some of those submit inaccurate data or falsehoods, it sort of gets washed away and the overall data points we report on are still trustworthy.

Another thing is, it's important to ask the right questions, and ensure we are correlating what we are seeing with things that are being measured in other ways. One type of data that is really important to our mission at Thrive Health is happiness and wellbeing, as well as anxiety data. By asking specific questions targeting those data points, we are able to correlate that with health outcomes of those people. When we ask the happiness question—how happy are you with life as a whole these days on a scale of 0 to 10? —people with higher scores tend to be more resilient through their health journeys. We are able to correlate that score to more positive health outcomes, and can understand that data connection.

Likewise, we can understand that anxiety isn't always reserved for naturally anxious people, and this is especially prevalent right now, with the realities of COVID-19. When we see anxiety levels change, it's important not to assume their happiness has changed, which is why we pull data from different areas and see which data points influence others.

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There are a lot of gaps in information, with these pockets of data that are useful. What's missing is the journey of the patient—you can't track the data through their journey very well. To help fill in those gaps, we want data that includes information on test results, patient-reported outcomes, patient-reported experiences, metrics, and symptoms, and we want to continually include that data over time. Being able to see those time-stamps as a series of data over time from a variety of different perspectives and sources gives us great insights to improve healthcare delivery.

Obviously, it can help healthcare providers see the person at a given time with a better holistic view of what's going on with their health, but what is more powerful is to empower individual patients and their families to play a bigger role in their journey. When we first started Thrive Health, we talked a lot about the idea of the new Hippocratic oath.

The other important aspect of data for us is the privacy and security. Obviously, any transgressions on privacy and security are completely unacceptable, and could cause problems for the people in the community. Our five- to six-person data team works diligently to ensure that we prevent any data breach issues.

**You also have caregivers as a part of the application. Do you give them insights throughout the patient journey that can aid them in improving happiness and wellbeing levels of patients?**

There are a bunch of different elements to that. The core is helping caregivers understand the wellbeing levels of the people they're interacting with. The next thing is understanding how as a caregiver, you will influence wellbeing levels and health outcomes.

We're also doing some work directly with caregiver wellness including level of burnout, stress, and suicide. What we're seeing are high levels of these things among a lot of frontline care workers. There's obviously a tremendous human cost to that, not to mention the financial costs. It's obvious why the health care sector is interested in addressing that—the better health the care provider is in, the better care they're going to provide to their patients. What we are trying to get to is the airplane analogy—you need to put your oxygen mask on first, before you put the mask on others. It is the same thing with wellbeing. Our caregivers need to be in a place of happiness and good wellbeing before they can work with patients to achieve higher levels of success.

### That's a really interesting approach. The field you're working in sounds very data-driven. What are some of the really interesting trends you're seeing in the field in general?

I can't not mention COVID because that's obviously having a major impact on the delivery of digital health around the world right now. What's interesting is how it takes a crisis like this to make these things happen. Once the change occurs to serve patients differently, like we're seeing during COVID, there's no turning back. People are slowly starting to recognize that the sky is not falling by having more virtual delivery of medicine, or more technological solutions because at the end of the day it is enabling better triage and follow up.

Another trend we're betting on, and actually, I wouldn't call it a trend, I would just call it a truth that's gradually becoming more accepted, is the importance of mental wellbeing on both patients and caregivers throughout the healthcare system. Right now, it's very easy to understand depression, and that is addressed in a lot of different ways. But the fact that mental health seems to only be understood at the level of mental illness—depression, anxiety, or the negative part of the spectrum—is something that needs to change. We are starting to recognize that we're all somewhere on the spectrum, and day-to-day our mental wellness can change. Recognizing that objectively, and understanding how that has an impact on how we deliver care, and how that care is received is an incredibly important trend.

### Why did you become interested in wellbeing and happiness as a factor in care?

A big reason why I am interested in this is my father, John Helliwell. He's a happiness researcher and he writes the World Happiness Report every year. The report gets millions of downloads every year, and is developed to rank all the countries in the world in regards to their happiness levels. He started working on this when he was a professor at Harvard in the mid-1990s. Ever since then, I've been very plugged in with him and his peers, and remain interested in seeing trends and where the study is going. A lot of his research has proved things empirically in the field, but they have a hard time applying it to how you actually change the way you do things. We see a role for this kind of work in delivering better healthcare.

### You touched on a lot of the opportunities you see in empowering patients, but what are some of the common issues you see? And why is it important for patients to participate in their own care?

A big problem, at least in Canada, are the wait lists for specialist care. When people wait, they don't often have much information about what is going on. They don't know what's coming next, or if there's anything they should be doing in the meantime. Often they will be waiting for a referral to a specialist, and then end up not even needing to be seen by that specialist, but rather a different medical professional. Sometimes they wait months or years, and then get re-directed and have to start the process all over again. And quite frankly, there really isn't a great waiting list in Canada—it's mostly just names of a bunch of people waiting, and it's usually not that well organized. I believe this can all be improved dramatically with technology.

We can help this by managing a lot of the initial triage and getting the answers to questions that specialists need to know. Generally, there are three to five questions they need answers to and know what to do for most patients, so we take care of that in advance. Conservatively, we think that at least half the patients on the waitlist can be triaged through the specialist just by hearing the answers to a handful of questions—they don't even need to see them in person.

Of course, there are trickier cases where the specialist needs to see the patient directly. The idea, however, is if we can reduce their waitlist by even half, and redirect those patients to where they should actually be going to, it's a huge benefit both to the patient and the healthcare provider.

### Where do you see the company going in five years?

Right now we have a team working to share some of our COVID symptom tracking abilities with any developing country that wants access, with no charges for the licensing. That is something that's of great interest to us for the longer term. We want to gradually give more and more people access to digital tools. Being able to play a role in helping to provide effective, affordable healthcare to people around the world is a big deal for us in the next five, ten, and twenty years.

**Ok, last question. What's been the most game-changing experience you've had while working at Thrive Health?**

It has to be our experience just this spring with partnering with Health Canada. Having the government partner with us to deliver the COVID-19 platform to all Canadians has been so rewarding. And it's only just beginning, because we are now working on further tools like contact tracing, back to work solutions, and information to help restart the economy. With all of these tools being built for COVID, we know there are going to also be longer-lasting benefits. Once our focus isn't targeted at COVID solutions, we will already have the structure to interact with the population in these sorts of ways, and overall helping with public health, which is really exciting.

Thank you to David and the Thrive Health team for their insightful conversation about AI in Drug Discovery. If you are looking for more information about Thrive Health please reach out to them directly.

DrugBank offers a number of commercial products to help customers like Thrive Health get the structured and comprehensive drug they need for artificial intelligence. If you are interested in learning how our products can help your company, please email us at info@drugbank.ca.

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