DRUGBANK + healx

How high-quality drug data helps Healx treat rare diseases

ABOUT HEALX

Healx is focused on accelerating the development of treatments for rare diseases using their platform Healnet.

By integrating AI with deep pharmacology and patient insight, Healx can repurpose existing drugs, translating therapies into the clinic within 24 months.

WEBSITE
healx.io

SOLUTION
DrugBank's Datasets

USE CASE
Machine Learning in Drug Repurposing

THE CHALLENGE

Healx co-founders Dr. Tim Guilliman and Dr. David Brown met a father who had been working tirelessly to save his son from a rare genetic disorder. The drug discovery process was slow, incredibly costly, and regrettably rarely successful. As longtime advocates for drug repurposing, Tim and David saw this as an inspiration to combine drug data with the power and speed of Artificial Intelligence (AI) to bring new treatments to patients who need them most.

Their goal became to reduce the time and cost it takes to develop drugs when compared to conventional drug discovery methods.

To do this they developed Healnet, a comprehensive AI-based drug discovery platform that takes in structured public and private data, then runs proprietary algorithms to find existing drugs and treatments to match difficult to treat diseases.

Healx has set their objective to advance 100 rare disease treatments toward the clinic by 2025.

For Healnet to operate successfully, they needed high-quality data to train their Machine-Learning (ML) and AI algorithms.

Unfortunately, obtaining this information is difficult because most drug knowledge exists within scientific publications in an unstructured text format. Without access to organized and structured data, Healx would have to source, sort, and maintain all their own data which would dramatically slow down their entire process. ⌕
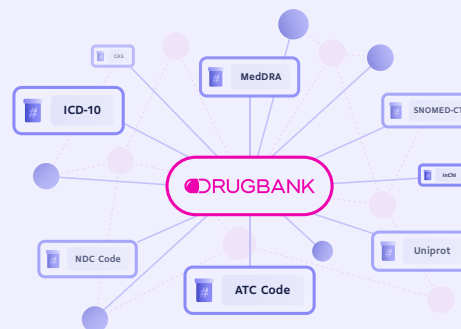

THE SOLUTION

DrugBank offered the detailed, machine-readable drug data that Healx needed to immediately start training their drug repurposing algorithms.

In order for Healx to produce accurate and reliable results with a high likelihood of success they sought out datasets with an immense breadth and depth of drug data. Unrivaled and trusted across the industry, DrugBank was able to provide numerous datasets including **drug properties, targets, indications, clinical trials, and drug-drug interactions.**

Healx also relies on DrugBank's organization and format of downloaded files. The clear separation and structure of fields means data can be easily imported into a database or graph structure. The use of **standard identifiers** (such as UniProt protein identifiers or ICD-10 disease classification) and controlled vocabularies enables much simpler integration with additional data sources.

DrugBank's pharmaceutical and medical experts ensure all drug data is up-to-date, accurate, and highly detailed.

For example, **drug indications** have a flag for off-label use and controlled vocabulary terms defining if the drug is used for prevention, management, symptomatic relief and so on for a particular disease. This level of detail enables Healx to work more efficiently and get to clinic faster. 🔍

SEARCH BY CONDITION

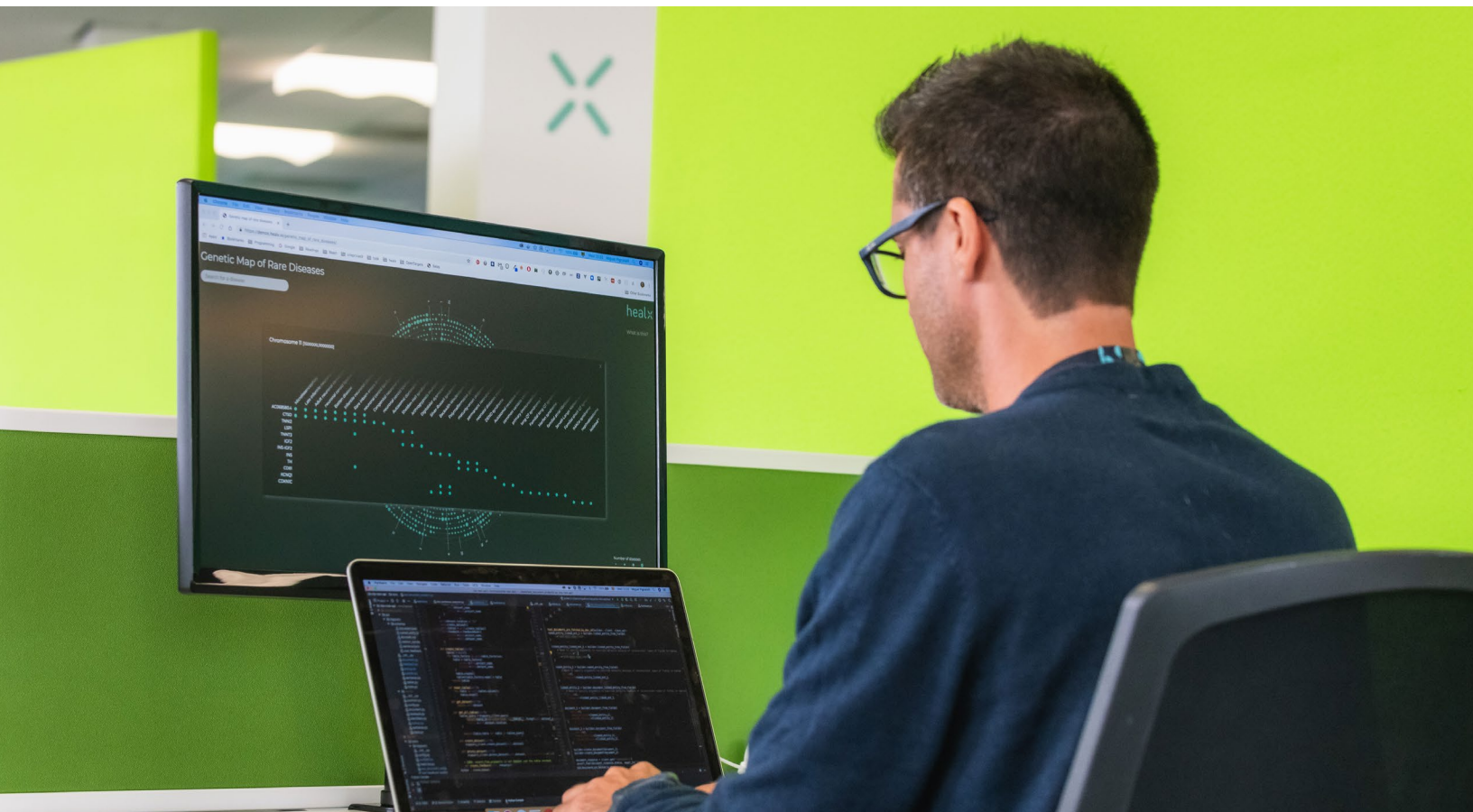## Deep vein thrombosis 🔍

INDICATION DETAILS

DRUG ↕	ID ↕	KIND ↕	
Apixaban	DBIND0006816	Treatment Prevention	MORE
Rifaximin	DBIND0005817	Treatment	MORE
Rivaroxaban	DBIND0021271	Prevention	MORE
Loperamide	DBIND0003657	Symptomatic Treatment	MORE

"For AI and machine learning applications the choice and quality of input data is as important as the algorithms themselves. We've been very happy with DrugBank's structured data and responsive service."

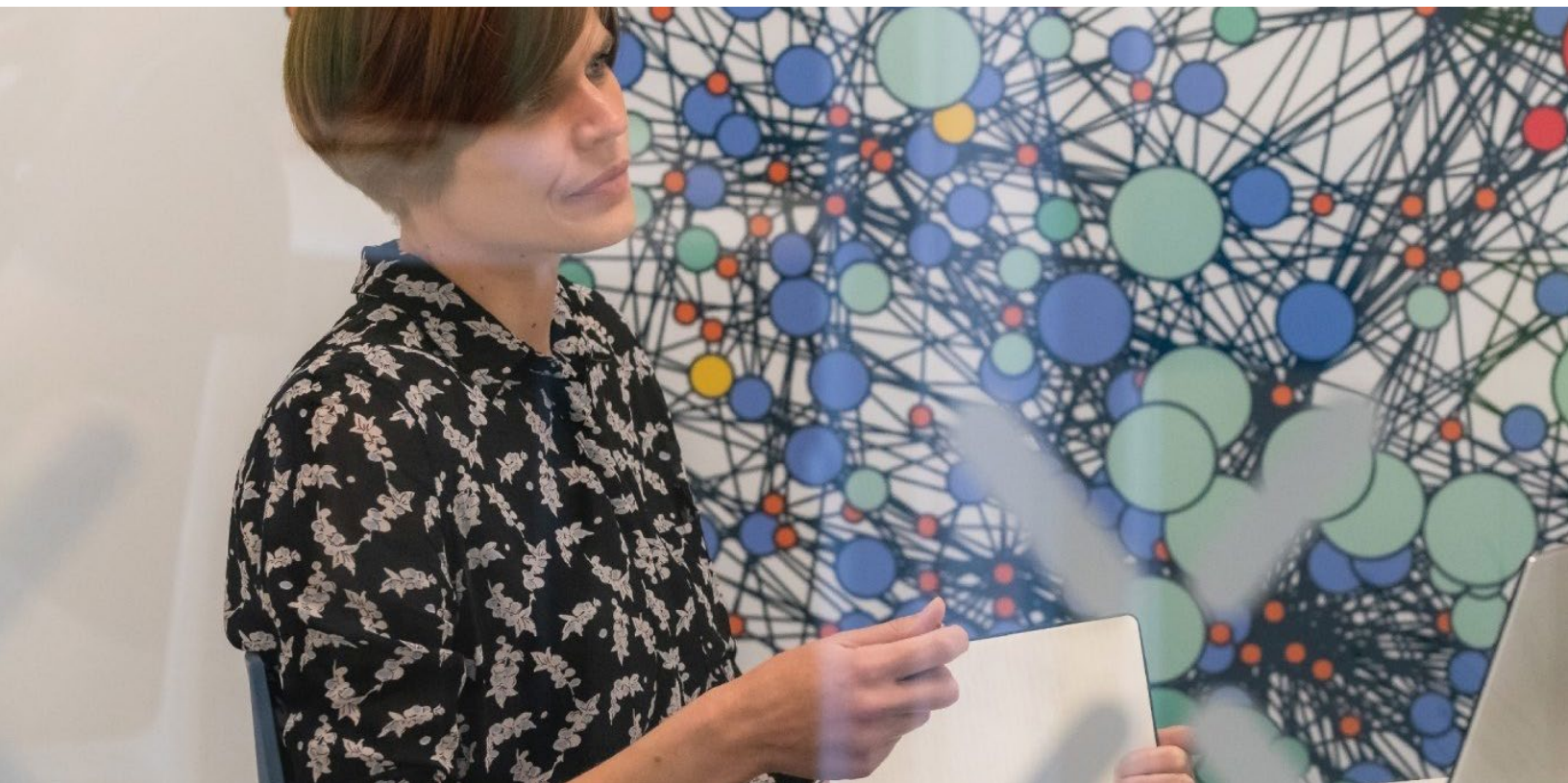— **Richard Smith,** *Senior Software Engineer, Healx*

THE RESULTS

Traditionally, drug discovery takes 10-15 years to bring a new drug to market. Drug repurposing has dramatically reduced that timeline and can bring treatment to patients in as quickly as three years. However, drug repurposing has mostly been a result of luck as opposed to systemized searching.

Through the use of Healnet, in-house expertise, and robust datasets, Healx is aggressively pursuing treatments for overlooked rare diseases.

Their targeted approach is reducing time and effort and returning stronger results.

Healx has already identified potential treatments for numerous rare diseases that are currently in preclinical and clinical phases of testing and are drawing attention across the medical world.

Request a data sample today!

And uncover better findings

info@drugbank.com | drugbank.com