# Better Data, Better Health

## VIGNETTE:
## DR. CHRISTOPHER PETTENGELL

**Driven by his belief that better care for patients can be delivered by using health data to assist clinical decision-making, Dr. Christopher Pettengell quit his job as a surgeon in the UK and moved to Canada to join an innovative AI health technology company to make his vision a reality.**

Dr. Christopher Pettengell graduated with a medical degree from Oxford University and spent over 10 years treating patients as a surgeon in the UK. As much as Dr. Pettengell loved his practice, he grew frustrated that data was not being used in ways that would increase a patient's chance of recovery and survival. If life-saving data could somehow be leveraged from clinical notes and patient histories, it would substantially reduce costs and improve the effectiveness of health care.

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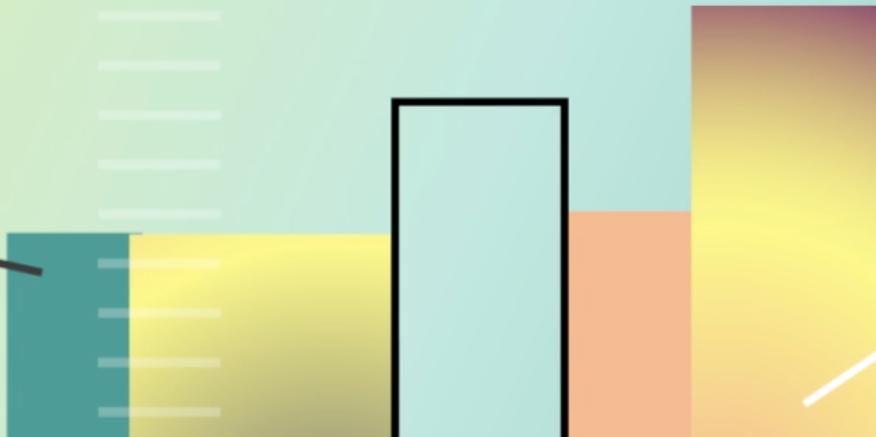
"All practicing clinicians are faced with the need to make life-and-death treatment decisions. Doctors have to rely on their intuition because of a lack of meaningful data that could substantially increase the odds of patient recovery and survival. This approach to medicine is just not good enough."



Dr. Pettengell initially set out to develop a rudimentary database with surgery-related outcomes that scientists, clinicians and patients could use to better understand why patients respond differently to different treatments. But he soon ran into significant problems. Most of the data existed in complex doctor's notes that would need to be looked at one patient record at a time and entered by hand into a computer system. Only then would it be possible to analyze the data to generate meaningful insights and conclusions. This process proved to be expensive, slow and difficult to get accurate results.
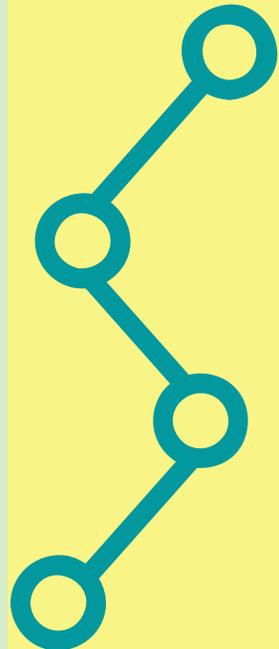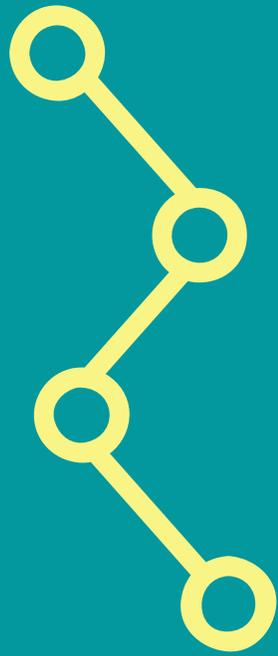
"I was painfully aware that existing health data cannot be compiled in an accessible way to improve patient outcomes. Everyone was struggling with the same problem. I knew that we could achieve a breakthrough if only we could find the right Artificial Intelligence (AI) technology to unlock that data."

Dr. Pettengell started exploring IT solutions for solving this widespread challenge. It was not long before he discovered Pentavere—a Toronto-based start-up using AI technology to quickly and accurately make clinician notes into digital records. Having completed part of his education at the University of Toronto, Dr. Pettengell was familiar with Toronto and the city's global reputation as a hotspot for AI research and decided to reach out to introduce himself and learn more about the technology. The discussions began to evolve and soon Dr. Pettengell was making the life-changing decision to quit his job as a surgeon in the UK and move his family to Canada to join the Pentavere team.



"Pentavere's AI technology is the best I've found for quickly converting inaccessible, raw data into meaningful, actionable information. It creates a system that can constantly 'learn' as more data is generated. It is incredibly powerful technology."

As the company's Chief Medical Officer, Dr. Pettengell has been very busy working with healthcare and research institutions across Canada, the US and Europe to implement Pentavere's technology. Relying on Canada's strict data privacy policies, Pentavere has come up with solutions to enhance the confidentiality and privacy of patient data being used for research and is supporting policymakers to update inconsistent guidelines on health data sharing. To demonstrate how health data can generate meaningful insights, Pentavere has teamed up with the Canadian Personalized Healthcare Innovation Network (CPHIN) to use real-world data to determine the tests and treatments that would deliver the best outcomes for lung cancer patients.

"Now, more than ever, we are in desperate need of high-quality, reliable data that can drive improved patient outcomes but we haven't previously had the systems or tools in place to achieve that. The work that Pentavere is doing with CPHIN could be a big part of the answer to something like the COVID-19 crisis and is the reason I love what I do."

Now that AI technology is available, the use of robust health data has the potential to transform how care is delivered and how diseases are treated and prevented—this is personalized healthcare. Canada's emerging healthcare start-up sector is poised to develop technologies that will position Canada as a leader in personalized healthcare. However, to achieve such a future, we must enable data sharing and integration and boost our growing health technology sector by making Canada's data policies and laws clear and modern. This will ultimately deliver the insights that improve care for Canadians.

**Every Canadian needs to be part of the conversation and help build a responsible, transparent approach to sharing health data that protects our privacy, enables the most effective healthcare possible and contributes to Canada's health innovation economy.**