

A healthcare professional, likely a nurse or doctor, is shown from the chest down, wearing blue scrubs and a stethoscope. They are holding a white tablet computer with both hands, looking at the screen. The background is a blurred hospital environment with metal railings. The overall lighting is cool and blue-toned.

CREATE

Inventing the future of health care

# CREATE (CentRE for dAta science and digiTal hEalth)

CREATE was founded to support innovation and research at Hamilton Health Sciences.

Our multidisciplinary team is made up of specialists in health systems, data engineering, data science, software engineering and interoperability.

Our mission is to partner with scientists and innovators to invent the future of health care.



## Data science team

Our data team focuses on applied machine learning and artificial intelligence, as well as managing high volume, high velocity, high variability data.

Our data scientists are skilled in a range of machine learning approaches, including deep learning.

They are experienced in applying data science for variety of applications, including risk prediction, image recognition and natural language processing.

# Learning Health Systems: AI for Reducing Unnecessary Angiograms

Partnered with the cath lab to train an AI model on 12 years of HHS referral data to predict which patients will not benefit from an angiogram

Model performance achieved an AUC of 0.802, far outperforming any previous models

Estimated that once put into practice it will help us avoid 770 angiograms a year, reducing risks to patients and saving the system \$972,000 a year



## Digital health team

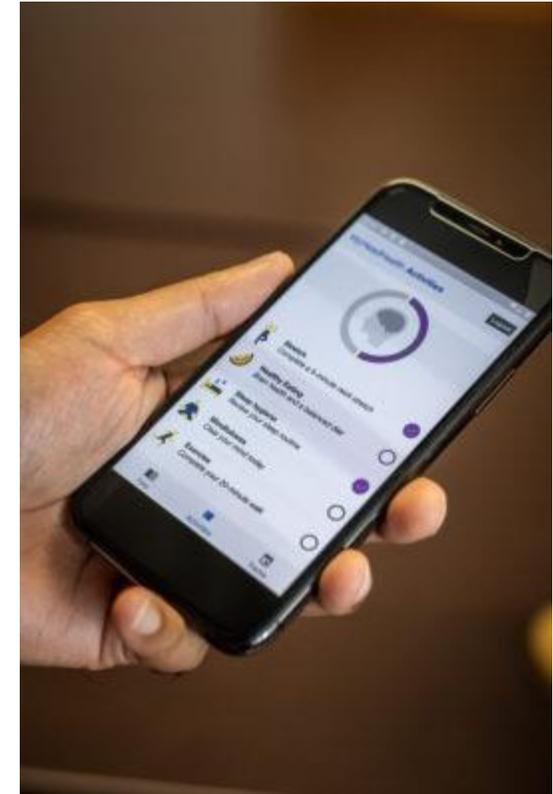
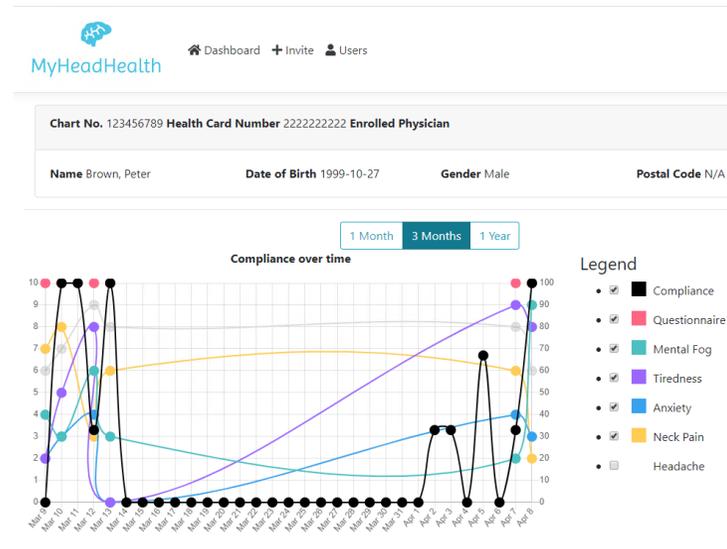
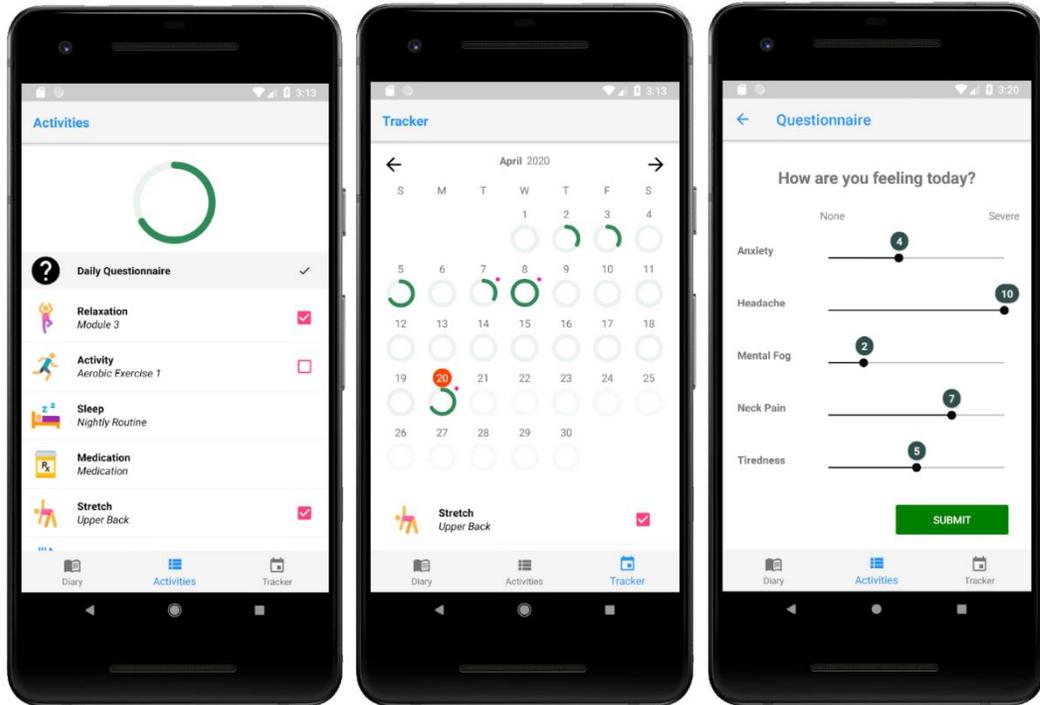
Our digital team specializes in the design, development and deployment of clinical applications.

Our solutions architects are experienced in deploying large-scale software solutions in both Canada and the developing world.

They are experts in health care interoperability standards to ensure our solutions can be integrated with other health information systems.

# Patient Empowerment: MyHeadHealth

Designed in partnership with the Integrated Adult Concussion Clinic to empower patients to take control of their own recovery



# Integration strategy

Many of our tools are designed to be scaled outside of HHS.

We design them to be interoperable using industry-standard APIs (HL7 FHIR).

Once HHS' goes live with Epic, we will be able to integrate via Epic's Orchard and other integration points.



# High performance computing



# How we support industry partners

- Supporting collaborations involving health data (Huron Digital Pathology)
- Data engineering (Pentavere)
- Applied Machine Learning (CloudDx)
- Integration to EMRs, Provincial Assets, etc. (YMS)
- Software development (Mutuo Health Solutions)

