

Scientific Registry for the Study of Spinal Disorders Whitepaper

May 2020

The University of Calgary Spine Program is embarking on a bold project. We are developing a technical framework for the delivery of personalized care in the treatment of spinal disorders.

This work combines advances in data science methods of accurate data collection, patient-focused predictive analysis and personalized communications in the management of spinal disorders.

This framework will permit the secure collection, storage and analysis of clinical, neurological, functional, multi-parametric imaging and outcome data so as to advance the concept of personalized care in the treatment of spinal disorders. Our research team captures data along the longitudinal course of disease and uses this information to build machine learning algorithms to help answer patient-focused questions.

We take a personal experience, anonymize it and share it with others who are going through the same situation and are trying to make important treatment decisions. We use cryptography to protect sensitive, personal data and aim to help others understand how a spinal disorder can impact quality of life.

We communicate personalized information to an individual patient to help improve their understanding of their unique situation. Our research team designs visualizations to help you understand disorders of the human spine and deliver this confidential personal report that summarizes your current situation. We communicate with you along the course of your symptoms and treatment plan. We regularly update our website to bring you up-to-date information. In the future, we will offer you personalized predictions should you want to explore different treatment options.

We have designed this open source project to capture the creativity and innovation of modern day surgeons, research teams, data scientists, primary care physicians, public health teams and patients to mold a tool that aims to improve the quality of life of persons living with spinal disorders.

For further information, please contact Dr. David W. Cadotte, david.cadotte@ucalgary.ca