

## Colin Weaver



### Biography

Colin Weaver is a Masters student in Community Health Sciences at the University of Calgary. He has a Bachelor's degree in Statistics and has worked in multiple roles at the University of Calgary, including two years at the University of Calgary's Health Technology Assessment Unit.

Colin's thesis examines the identification of individuals in primary care practices at high risk of acute care visits. The ultimate goal is to identify individuals before they require acute care such that they may be provided appropriate and timely primary care.

His interests include statistics, primary care, addressing social determinants of health, ensuring the economic sustainability of our health care system, and producing research that has an impact on policy and clinical practice. Colin also loves to cook, bike, hike, cross-country ski, and play board games.

### Project Summary

*Using Primary Care Electronic Medical Record Data to Predict Use and Repeated Use of Acute Health Care Services*

The goal of this research is to identify patients in primary care practices who are at high risk of frequent acute care use in the future. This identification is the first step in preventing acute care use; appropriate interventions for these high-risk individuals could then be considered to prevent their need for acute care.

Preventing acute care use may improve individual health and wellbeing while reducing overall health care costs. Those requiring acute care are often sicker and being in acute care is stressful to the patient and their family.

We will use Alberta primary care electronic medical record data from the Canadian Primary Care Sentinel Surveillance Network, which includes demographic, clinical, laboratory, and medication data. This will be linked to hospital and emergency department administrative health data from Alberta Health Services. The performance of multiple machine learning statistical techniques on our data will be compared, and the best one will be used to predict acute health care use.

We will consult with clinicians, decision-makers, and other experts in primary care to design the project and conduct the analysis in a way that can directly impact how primary care providers deliver care. By connecting with the Canadian Primary Care Sentinel Surveillance Network we will be able to share knowledge gained with practicing family doctors across the country in a unique and efficient manner.