

How can Canadian health research and innovation help address the most pressing health priorities in Canada?

OPIOID CRISIS

The Problem: Canada is the world's second highest per-capita consumer of opioids, leading to widespread misuse, dependence and addiction. More than 12,800 opioid-related deaths occurred between 2016 and 2019.¹

What Can Health Research Do?	What Can Health Innovation Do?
<p>Optimizing patient-centred care: The OPTIMA Study is a national clinical trial aimed at evaluating different treatment models of care for treating prescription opioid use disorders.</p> <p>Vancouver Centre & Vancouver Granville (BC) BC Centre on Substance Use & Vancouver Coastal Health Research Institute</p>	<p>Innovation on the go: Ottawa researchers are using a portable mass spectrometer to test street drugs for dangerous substances before use to help minimize risk of overdose.</p> <p>Ottawa Centre & Ottawa—Vanier (ON) Carleton University & University of Ottawa</p>

ENVIRONMENTAL HEALTH AND CLIMATE CHANGE

The Problem: Climate change has been called “the biggest global health threat of the 21st century,”² and we are already seeing its health effects—from the increasing prevalence of vector-borne diseases like Lyme disease to rising concerns about food security due to droughts and other severe weather events.

What Can Health Research Do?	What Can Health Innovation Do?
<p>Patient data are key: Lyme disease is on the rise thanks to climate change, but researchers with the Pan-Canadian Research Network on Lyme Disease are collecting data from patients across Canada to improve its prevention, control, diagnosis and treatment.</p> <p>Kingston and the Islands (ON) Queen's University</p>	<p>Inter-disciplinary innovations for health: Agricultural researcher Dr. Leon Kochian is breeding crops with healthier, more efficient root systems to help them grow in less fertile soils as an innovative solution to global food insecurity.</p> <p>Saskatoon (SK) University of Saskatchewan</p>

INDIGENOUS HEALTH

The Problem: Indigenous Peoples in Canada carry a disproportionate burden of disease and disability compared to non-Indigenous Canadians, a burden that can be exacerbated by a lack of access to and availability of culturally appropriate and informed health services.

What Can Health Research Do?	What Can Health Innovation Do?
<p>Community-informed solutions: Researchers at CAMH are working with the Saugeen First Nation to develop a community-led and -informed strategy to combat opioid use.</p> <p>University—Rosedale (ON) Centre for Addiction and Mental Health (CAMH)</p>	<p>'Get Tested' with the help of innovation: Saskatchewan-based non-profit, Wellness Wheel, is helping to improve access to testing and health care for HIV and other chronic diseases by bringing doctors and nurses directly to Indigenous communities.</p> <p>Regina—Wascana (SK) Indigenous Wellness Research Community Network</p>

MENTAL HEALTH

The Problem: 1 in 3 Canadians will experience a mental health problem or illness during their lifetime.³ It affects people of all ages, education, income levels, and cultures.

What Can Health Research Do?	What Can Health Innovation Do?
<p>Finding the exercise 'sweet spot': Early-career researcher Dr. Natalia Jaworska is examining the impact of exercise in depressed youth to ultimately help inform best practices for clinicians working with youth with mental health disorders.</p> <p>Ottawa Centre (ON) The Royal's Institute of Mental Health Research, affiliated with the University of Ottawa</p>	<p>Innovation for better treatment: Award-winning researcher Dr. Martin Alda is working to develop a clinical test that uses neuron cultures from patients with bipolar disorder to help identify a personalized course of treatment.</p> <p>Halifax (NS) Nova Scotia Health Authority</p>

1. Government of Canada (September 2019). *National Report: Apparent Opioid-related Deaths in Canada*.

2. The Lancet (2018). *The 2018 report of the Lancet Countdown on health and climate change: shaping the health of nations for centuries to come*. <https://www.thelancet.com/action/showPdf?pii=S0140-6736%2818%2932594-7>

3. Government of Canada (2016). *Data Blog: Mental Illness in Canada*. <https://health-infobase.canada.ca/datalab/mental-illness-blog.html>

HEALTH IN AN AGING POPULATION

The Problem: Canada is aging faster than ever. Canadians are living longer and with fewer disabilities than the generations before them, but at the same time, the majority of seniors have at least one chronic disease or condition.

What Can Health Research Do?	What Can Health Innovation Do?
<p>A brain-training program that works: Researchers and eLearning experts have translated Goal Management Training (GMT), a leading, evidence-based rehabilitation method to improve executive function in older adults and brain disorder patients, into an accessible, online brain-training program.</p> <p><i>Eglington—Lawrence (ON) Baycrest's Rotman Research Institute</i></p>	<p>Sensor systems for the smart home: AGE-WELL's National Innovation Hub is bringing together health professionals, researchers, patients and other stakeholders to develop smart home systems that help monitor the health of older adults and predict and prevent health problems.</p> <p><i>University—Rosedale, Ottawa—Vanier & Ottawa Centre (ON) AGE-WELL, Bruyère Research Institute & Carleton University</i></p>

ACCESS TO AFFORDABLE HEALTH CARE AND MEDICINES

The Problem: There are a number of reasons why many Canadians struggle to access health care—both in terms of preventative care and potentially life-saving treatments—from residing in isolated rural communities, to the high costs of therapeutics, to the simple lack of availability of high-quality preventative care or treatments.

What Can Health Research Do?	What Can Health Innovation Do?
<p>Clinical trials bring cutting-edge treatments to patients: Two Alberta sisters with a rare genetic disorder are participating in a clinical trial to test an innovative, cutting-edge treatment that would otherwise be unavailable to them.</p> <p><i>Calgary Confederation (AB) University of Calgary</i></p>	<p>Digital health solutions for remote communities: Project ECHO uses online technologies like videoconferencing to connect health care professionals in remote and isolated communities with medical specialists from across Ontario, giving patients in isolated communities access to quality, specialized health care. The first ECHO hub in Ontario was established in 2014 by researchers at UHN and focuses on chronic pain and opioid abuse.</p> <p><i>University—Rosedale (ON) Extension for Community Healthcare Outcomes & University Health Network (UHN)</i></p>

VETERAN AND MILITARY HEALTH: A PATIENT PERSPECTIVE



By Lacey Cranston
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"I didn't earn it, not the way you're supposed to," he said. "I didn't go to war. I've never deployed to Afghanistan."

It was four months since my husband was diagnosed with post-traumatic stress disorder (PTSD), although he'd been suffering from its debilitating effects for years. Finally putting a name to his feelings was a double-edged sword; on one hand, he had a diagnosis. On the other, it was difficult to accept.

My husband's PTSD developed atypically. It wasn't due to a single catastrophic event, or as a result of combat during his 15 years as a military pilot. It built up slowly while mentoring the next generation of aviators as an instructor. Constant feelings of stress, danger, fear, hopelessness and betrayal took their toll. Symptoms lay dormant for over a year before exploding into our lives.

I'd spent hours on MEDLINE and PubMed, in online PTSD support groups and reading medical journals, searching for research to help him process his diagnosis. I was at a loss, until I found the article that changed everything.

"Posttraumatic Stress Disorder in Adults: Impact, Comorbidity, Risk Factors, and Treatment," by Dr. Jitender Sareen was the first paper I read to state PTSD can be brought on by "an accumulation of multiple exposures to various traumatic events" and that symptoms sometimes don't manifest until months, or years, later. It was the first time I recognized my husband — his struggle, his illness trajectory — in a scientific article.

I shoved it under his nose.

"That's me," my husband said, reading Sareen's paper. His expression was like sunshine after a month of perpetual darkness.

The validation and relief were palpable. Someone recognized him. Someone cared. Someone wanted to make his life better; our lives better.

"I can't believe there's a researcher out there studying my kind of PTSD."

Kingston and the Islands (ON) | Canadian Institute for Military and Veteran Health Research