Changes in weather, such as heavy rainfall and melting snow, affect people’s risk of getting sick with diseases carried in water.

This risk of getting sick from unclean water may increase as climate change makes heavy rainfall and quick snowmelts more likely in Northern Canada. This study looked at the effects of weather, water quality, and human health in two Inuit communities.

After a lot of rainfall or snowmelt, there were more fecal bacteria in the untreated water supply. The most water entered the system during spring (snowmelt) and summer (rainfall).

Two to four weeks after lots of water entered the system, the number of people visiting a doctor because they were sick with vomiting and/or diarrhoea increased.

A few weeks after lots of rain or melting snow enters the drinking water system, people are more likely to get sick from diseases carried by water.

As climate change increases rainfall and rapid melting of snow in Northern communities, the risk of getting sick will likely also increase.

Policymakers can use this research to shape public health policies about water quality.

Public Health officials can use this research to anticipate and plan for health outbreaks in Northern Canada and other cold climates.

Governments can use this research to design protocols for monitoring weather and water monitoring programs.

Community members can use this information to predict when they should avoid drinking water directly from the municipal source.
What did the researchers do?
The researchers worked together with members of two Inuit communities in Nunatsiavut to carry out this research. The research team included scientists who study intestine infection risk, climate and water, as well as community members and government representatives. Community members helped design the research questions, ways to collect information for the study, and ways to fix the problem.

The research team collected data on daily temperature, rainfall, snow depth, and tested untreated drinking water samples for fecal bacteria. Water volume calculations included rain and snowmelt. Cases of sickness were instances of vomiting and/or diarrhoea that had no other related cause.

Keywords:
waterborne disease, Aboriginal health, Nunatsiavut, water contamination, water quality, weather, climate change, health

Article citation:

About the University of Guelph researchers:
Sherilee L. Harper is a doctoral student in the Department of Population Medicine. She is a Vanier Canada graduate scholar in Aboriginal people’s health. harpers@uoguelph.ca

Olaf Berke is an Assistant Professor with Department of Population Medicine in the Ontario Veterinary College at University of Guelph. He leads the Statistical Consulting group. oberke@uoguelph.ca

Scott McEwen is a Professor with Department of Population Medicine in the Ontario Veterinary College at University of Guelph. smcewen@uoguelph.ca

Cite this work:

This summary is a project of the Institute for Community Engaged Scholarship (ICES) at the University of Guelph, with project partners: the Catalyst Centre, SPARK Program at the University of Guelph, and the Knowledge Mobilization Unit at York University. This project is part of the Pan-Canadian Research Impact Network. http://csahs.uoguelph.ca/pps/Clear_Research

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