# Canadian North *Helicobacter pylori* (CAN*Help*) Working Group: Community-Driven Research in Arctic Canadian Communities

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## 1 Background

Research in academia focused on Indigenous peoples has historically failed to benefit the people being studied or to integrate Indigenous or traditional knowledge into its design. However, many residents of Indigenous communities see value in bringing research to their communities to help reduce the large health disparities they experience relative to other populations in Canada.

The Canadian North *Helicobacter pylori* (CAN*Help*) Working Group is a collaboration of academic scientists, northern community leaders and health care providers who conduct research to address Arctic Canadian community concerns about health risks from *H. pylori* infection.

The risks of *H. pylori* infection include:
- Gastritis (stomach inflammation)
- Symptoms of indigestion
- Stomach ulcers
- Stomach cancer (in rare cases)

Both stomach cancer rates and *H. pylori* prevalence are higher in Indigenous Canadians than the Canadian average.

The CAN*Help* Working Group formed between 2006-2008 in response to community concerns about *H. pylori* infection and its link to stomach cancer.

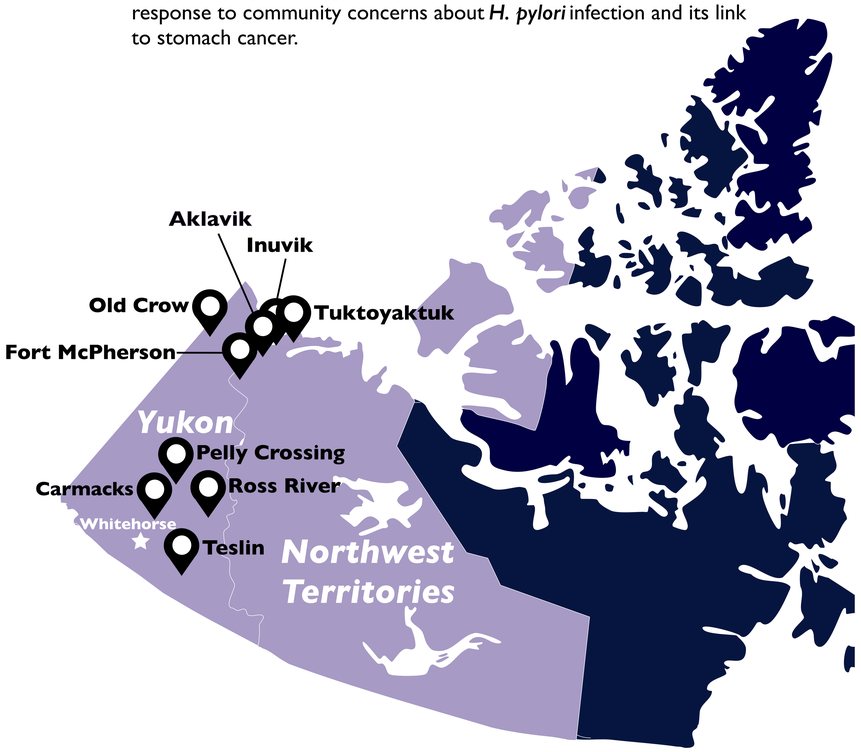


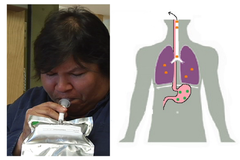

Figure 1: Locations of current CAN*Help* Working Group community *H. pylori* projects

## 2 Methods

The CAN*Help* Working Group uses community-driven research approaches and methods to ensure that the perspectives of all partners inform all stages of the research, from developing research questions to disseminating results.

Components of the research include:

- Structured Interviews
- Photovoice Narratives
- Non-invasive screening for *H. pylori* infection
- Endoscopy to collect stomach tissue biopsies for pathology and culture
- Treatment Trials
- Knowledge Exchange



Community projects conducted by this group have enrolled over 1250 participants across nine communities.

## 3 Results

| Community | Project Launch Year | Population | Number of Participants | *H. pylori* Prevalence (% Positive) |
|---|---|---|---|---|
| Aklavik | 2007 | 590 | 376 | 58% |
| Old Crow | 2010 | 221 | 208 | 66% |
| Tuktoyaktuk | 2011 | 898 | 108 | 57% |
| Fort McPherson | 2012 | 700 | 236 | 59% |
| Ross River | 2016 | 293 | 107 | 45% |
| Teslin | 2016 | 263 | 124 | 38% |
| Inuvik | 2017 | 3243 | 92 | 22% |

Table 1: Results from CAN*Help* Community Projects with data

The results reveal a high prevalence of *H. pylori* infection across participating communities: 53% (617/1155) of all participants tested and 61% (536/884) of Indigenous participants tested.

Clinical evaluation shows that *H. pylori*-positive participants have a higher-than-expected prevalence of pathological conditions that are associated with an increased risk of stomach cancer.

Figure 2: *H. pylori* Project Logos designed by community members

## 4 Accomplishments

This collaborative research has produced evidence that justifies community concerns about health impacts of *H. pylori*.

One of the most significant impacts of the CAN*Help* Working Group is the modification of the *H. pylori* treatment protocols in the Beaufort Delta region of the NWT; a regional healthcare partner modified these protocols based on community project treatment trial results as they emerged. The evidence that informed this change was incorporated into Canadian and American clinical practice guidelines in 2016.

Knowledge exchange activities have provided valuable learning opportunities for all partners. Partners have noted that without this research, communities and their healthcare providers would still not know the extent of the health burden caused by this infection.

## 5 Acknowledgements

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