



# Community-driven research on *Helicobacter pylori* infection in Northern Canada



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& CANHelp

(Canadian North *Helicobacter pylori*)

Working Group



# Research Context

- ◆ Aboriginal communities in Yukon and Northwest Territories express concern about health risks from *H. pylori* infection and seek research to find solutions
- ◆ Northern Canadian health authorities seek information
  - » to improve clinical management of *H. pylori* infection given perception of frequent treatment failure
  - » to inform public health policy related to *H. pylori* infection
- ◆ Northern communities are remote with respect to advanced medical services

# Project Goals

- ◆ To address community concerns about health risks from *H. pylori* infection
- ◆ To recommend *H. pylori* management strategies to health authorities
- ◆ To reduce health risks from *H. pylori* infection

# Research Questions

- ◆ To address project goals, the following information is needed for targeted communities:
  - » How widespread is the infection?
  - » What environmental factors are associated with it?
  - » What health problems result from it?
  - » Who requires medical care related to it?
  - » What are the best ways to treat it?
  - » How can it be assessed in remote communities?
  - » How can communities be protected from it?
  - » How can communities understand the obstacles to finding and implementing effective solutions?
  - » How can communities recognize benefits from research on community health problems that may be difficult to solve?

# CANHelp (Canadian North *Helicobacter pylori*) Working Group

## **Aklavik Community Organizations**

- ◆ Rachel Munday, Nurse in Charge, Aklavik Health Centre
- ◆ Aklavik Health Committee
- ◆ Billie Archie, Arctic Health Research Network, Aklavik Chapter

## **NWT Agencies**

- ◆ Andre Corriveau, Chief Medical Officer, Health and Social Services, NWT
- ◆ John Morse, Medical Director, Stanton Territorial Health Authority
- ◆ Leah Seaman, Beaufort-Delta Regional Health and Social Services Authority
- ◆ Susan Chatwood, Director, Arctic Health Research Network

## **Alberta Health Services**

- ◆ Robert Bailey, Director, Northern Health Services Network

## **University of Alberta**

- ◆ Principal Investigator: Karen Goodman, Epidemiology
- ◆ Gastroenterology: Sander van Zanten, Justin Cheung, Amy Morse, Richard Fedorak
- ◆ Microbiology: Monika Keelan, Joanne-Simala Grant
- ◆ Pathology: Safwat Girgis
- ◆ Anthropology: Christopher Fletcher
- ◆ Health Policy: Carl Phillips

# CANHelp Working Group Research Program Goals

- ◆ Collaborative Infrastructure Development
  - University of Alberta
  - Northern Health Authorities
  - Northern Health Services Network
  - Arctic Health Research Network
  - Community Leaders
- ◆ Link with Circumpolar *H. pylori* Researchers
- ◆ Initial Research Project: Aklavik *H. pylori* Project
- ◆ Expand Research to Diverse Northern Communities
- ◆ Knowledge Exchange and Policy Analysis

# Initial Research Project

## Aklavik *H. pylori* Project Aims

- 1) Investigate *H. pylori* infection in Aklavik
- 2) Include community members in research planning and conduct
- 3) Develop effective activities to inform community members of the research results so that the resulting knowledge becomes part of the community knowledge base

# Aklavik *H. pylori* Project Specific Aims

## Investigate *H. pylori* infection in Aklavik

- » Screen residents for *H. pylori* infection, family history, symptoms
- » Collect epidemiologic data on risk factors for *H. pylori* infection
- » Offer upper endoscopy to:
  - Estimate the prevalence of endoscopically significant abnormalities
  - Obtain biopsies to:
    - Estimate the prevalence of bacterial resistance to antibiotics and bacterial virulence factors
    - Characterize histopathology in relation to *H. pylori* infection
- » Evaluate the effectiveness of anti-*H. pylori* therapies
- » Follow those treated long-term to identify factors associated with treatment failure and reinfection



# Initial Study Community Aklavik, NWT

## Why Aklavik?

- ◆ Selected by NWT health authorities as a starting place for this research
  - » High level of community concern due to stomach cancer deaths in some families
  - » Enthusiasm for the research from local health authorities
- ◆ Other communities to be included later



### Canada

- International Boundary
- Province Boundary
- Road
- River
- ★ National Capital
- Province Capital
- City or Town

0 200 400 KM  
0 200 400 Miles

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# Study Community: Aklavik, NWT

- ◆ 2004 population: 631
  - » 90% Inuvialuit (Inuit) or Gwich'in Dene (First Nation)
- ◆ Access
  - » Reached only by air or by winter ice-road from Inuvik



# Aklavik Health Centre



# Overview:

## Aklavik *H. pylori* Project

- ◆ Component I
  - » Community Survey  
(*H. pylori* screening, clinical/epidemiologic data collection)
- ◆ Component II
  - » Endoscopy
- ◆ Component III
  - » Treatment
- ◆ Component IV
  - » Knowledge Exchange
- ◆ Component IV
  - » Policy Development



# Aklavik *H. pylori* Project Participation

- ◆ Participants recruited: **368**
- ◆ Clinical surveys completed: **339**
- ◆ Individuals with breath test results: **313**
- ◆ Aklavik residents appearing for endoscopy: **200**
- ◆ Individuals from whom biopsies were obtained: **194**
- ◆ Treatment trial participants: **111**
- ◆ (*In progress*) Epidemiology surveys completed:
  - » Household: **94**
  - » Individual: **167**

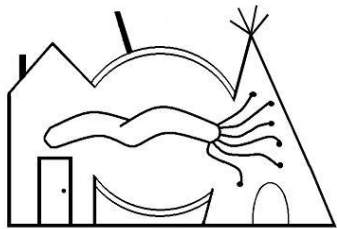


# Aklavik *H. pylori* Project

## Selected Findings

- ◆ Proportion positive on breath test
  - 58% (182/313)

*Disseminating updates on the number tested and community-wide prevalence during the testing period motivated others to participate.*



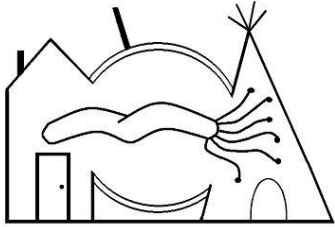
# Aklavik *H. pylori* Project

## Selected Findings

### ◆ Endoscopic abnormalities (n=194)

» Esophagitis	10.3%
» Gastritis	13.9%
» Duodenitis	6.7%
» Erosions	
• Gastric	6.2%
• Duodenal	0.5%
» Ulcers	
• Gastric	3.1%
• Duodenal	0
» Cancers	0





Aklavik H. pylori Project

# Aklavik *H. pylori* Project

## Selected Findings

### ◆ Histopathology (n=194)

» *H. pylori* positive 66.5%

» Among *H. pylori*-positive (n=129)

- Severe inflammation 43.4%
- Atrophy 20.9%
- Intestinal metaplasia 10.9%

# Aklavik Project Funding Agencies

- ◆ Alberta Heritage Foundation for Medical Research
- ◆ Canadian Association for Gastroenterology with Canadian Institutes for Health Research / AstraZeneca
- ◆ Social Sciences and Humanities Research Council
- ◆ Public Health Agency of Canada
- ◆ Indian and Northern Affairs Canada
- ◆ Canadian Circumpolar Institute

# Aklavik Project Supporters

**OLYMPUS**



**CANADIAN NORTH**  
seriously northern



**Northwest  
Territories**



**Inuvialuit Regional Corporation**

Bag Service #21, Inuvik, NT X0E 0T0



Aklavik H. pylori Project

# CANHelp Working Group Expansion to Other Communities

**From:** Darius.Elias [mailto:Darius.Elias@yla.gov.yk.ca] {Old Crow MLA in Yukon legislature}

**Sent:** Wednesday, August 20, 2008 11:02 AM

**To:** Karen Goodman

**Subject:** Vuntut Gwitchin First Nation Resolution No. 2008-02

## **Helicobacter Pylori Bacterium study in the community of Old Crow**

Whereas; For many years the community members of Old Crow have voiced concerns about the high number of internal body health problems;

Whereas; Many citizens feel there is a need to address H. Pylori health concerns because of its link to developing ulcers and then stomach cancer;

Whereas; It is vitally important to have early detection and prevention of health complications that could lead to cancer and possibly death;

Whereas; H. Pylori is an urgent health concern that effects many residents of Old Crow and which we would like health authorities to address;

Whereas; An H. Pylori research study presentation was described in an information session held at the 2008 International Gwitchin Gathering in Old Crow.

Therefore Be It Resolved;

The Vuntut Gwitchin First Nation General Assembly has considered the value of participating in a H. Pylori research study and we have unanimously decided that such a project be carried out in the community of Old Crow for those citizens willing to participate;

the community of Old Crow; Yukon healthcare professionals and the Division of Gastroenterology, University of Alberta lead and facilitate this project to ensure that it stays focused on community priorities and benefits the people of Old Crow, Yukoners and the citizens of the world.

# *H. pylori* Infection in Northern Canada

## Research Opportunities

- ◆ Analysis of Aklavik data
- ◆ Aklavik treatment follow-up
- ◆ Project development in Old Crow
- ◆ Consultation with new communities
- ◆ Knowledge exchange activities
- ◆ Policy development