The Impact of Free-Living Amoebae on the Prevalence of *Helicobacter pylori* Infection in Northern Indigenous Canadian Communities

Canadian North *Helicobacter pylori* (CAN*Help*) Working Group

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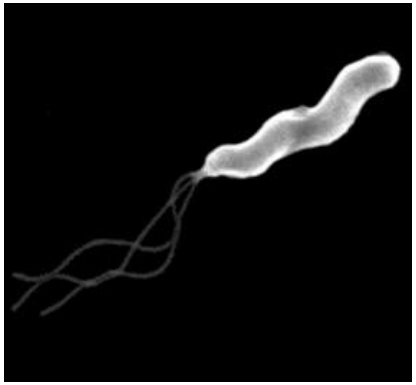
Introduction
Collaborative Team

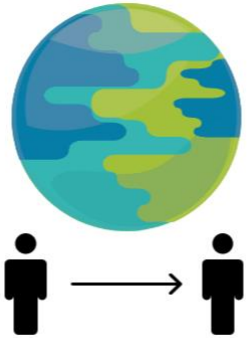
Address community concerns about health risks from *H. pylori* infection

Introduction
H. pylori

- What is *H. pylori*?
- How do people get *H. pylori* infection?
- Can people get *H. pylori* infection from drinking water?



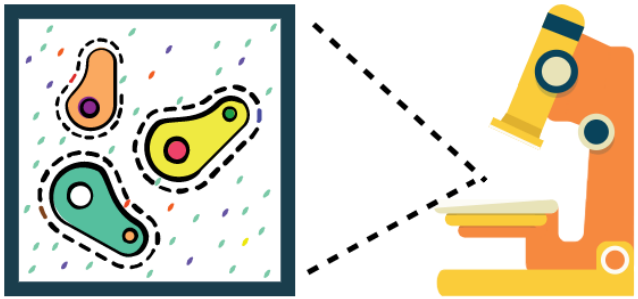
Credit: Dr. Amieva, Stanford University

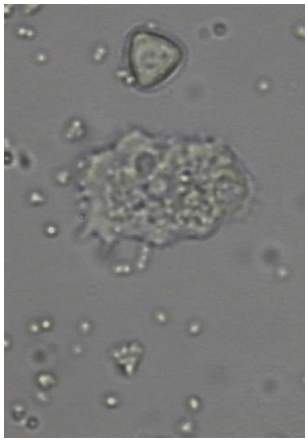


Introduction

H. pylori and Free Living Amoebae

- What are free-living amoebae (FLA)?
- Why do FLA matter?





Credit: Prazeres JM et al.

Methods

Sample Collection Activities

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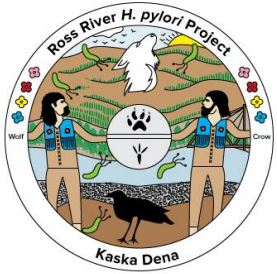
Community *H. pylori* Projects
that Participated in Water Collection Activities



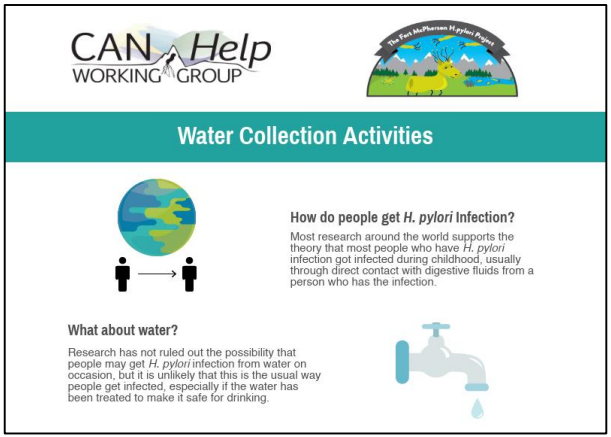
Methods

Sample Collection Activities

- Where did we collect samples from?

Methods
Sample Collection Activities

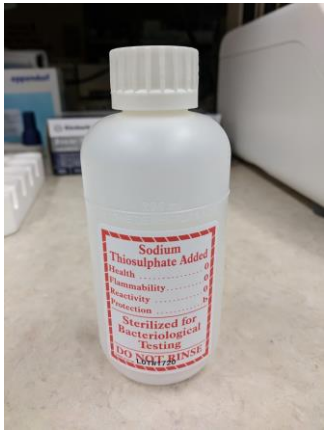
- How did we engage participants?

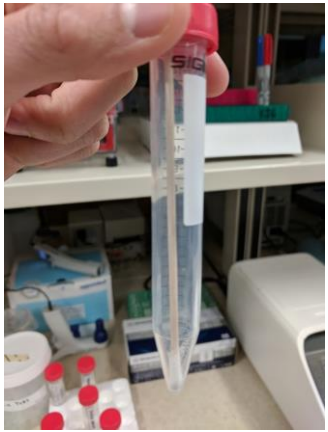


Methods

Household Sample Collection

In households, we collected samples from:

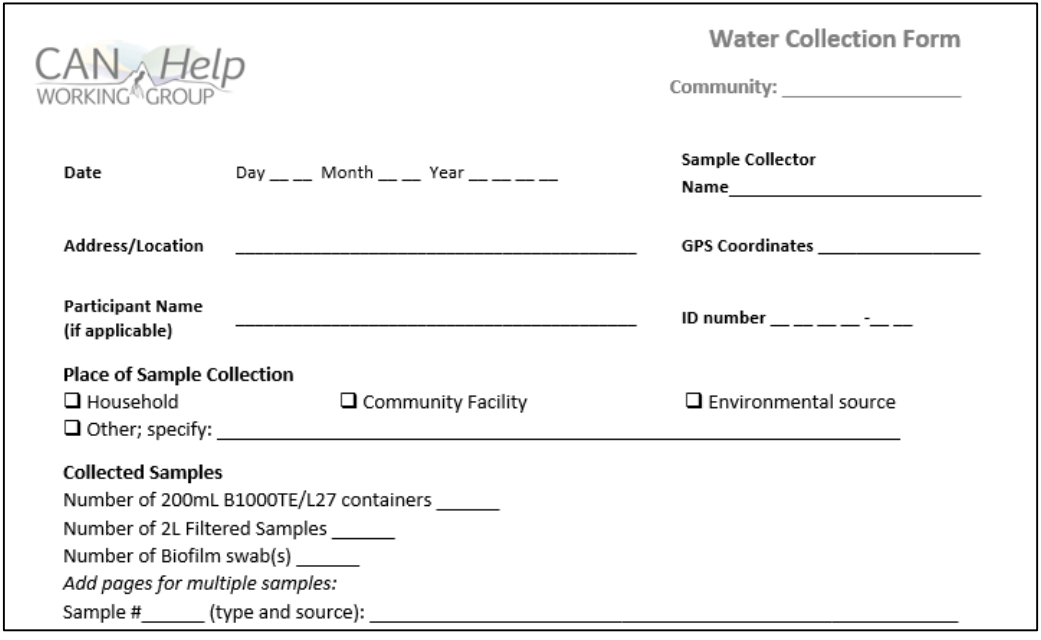




Methods

Household Sample Collection Form

- We asked participants about their plumbing using a structured questionnaire



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Water Collection Form

Community: _____

Date Day __ __ Month __ __ Year __ __ __ __

Sample Collector Name_____

Address/Location _____

GPS Coordinates _____

Participant Name (if applicable) _____

ID number __ __ __ __ -__ __

Place of Sample Collection

❑ Household ❑ Community Facility ❑ Environmental source

❑ Other; specify: _____

Collected Samples

Number of 200mL B1000TE/L27 containers _____

Number of 2L Filtered Samples _____

Number of Biofilm swab(s) _____

Add pages for multiple samples:

Sample #_____ (type and source): _____

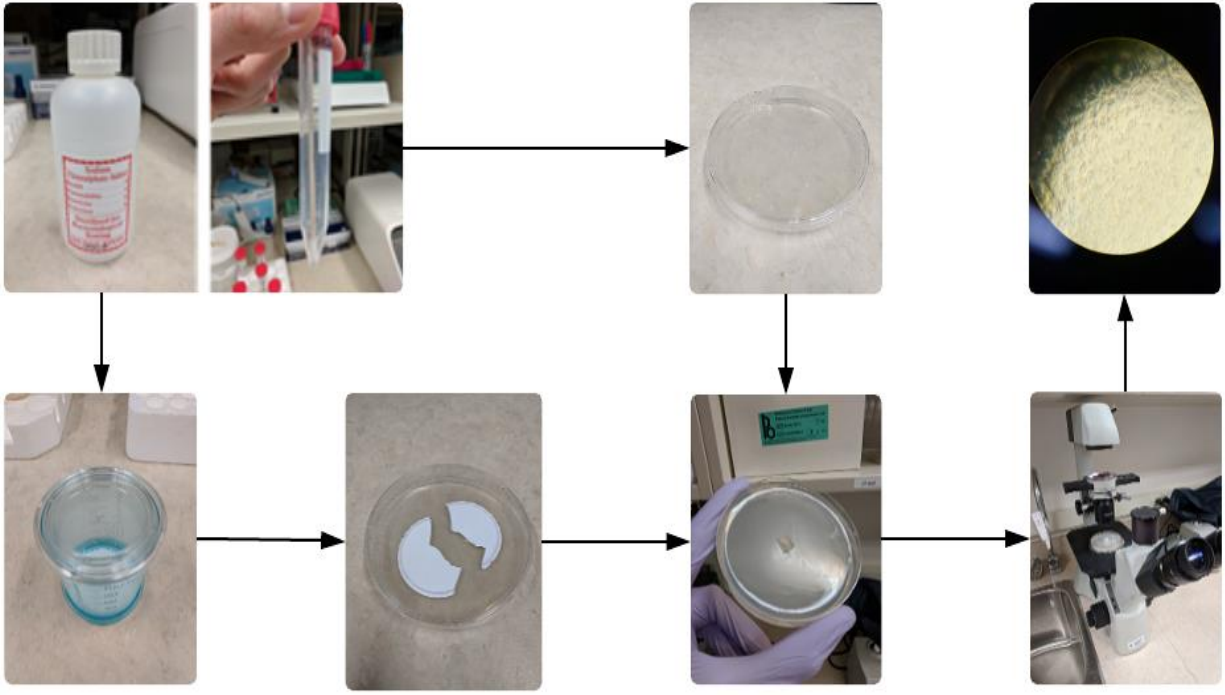
Methods

Environmental Water Collection

- From each environmental location, I collected three 200mL water samples

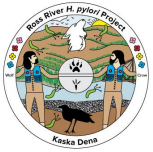
Methods

Walk-out Plating Method



Results

Number of Collection Sites by Community

Location	Community					
	 Ross River (Aug 2017)	 Teslin (Aug 2017)	 Old Crow (Feb 2018)	 Aklavik (Feb 2018)	 Fort McPherson (Feb 2018)	Total
Households	2	5	10	3	16	36
Community Facility	1	2	1	1	1	6
Environmental	11	7	0	0	0	18

Results

Findings to Date: 7 Teslin & Ross River Households

Location of Sample	Detection of FLA*	
	Positive for FLA (n)	Percent (%)
Kitchen Tap†	2/6	33.3
Shower/Bathtub	2/7	28.6
Toilet Tank	7/7	100.0
Toilet Tank Swab	5/7	71.4

* Presence of FLA trophozoites/cysts confirmed by light microscopy and growth on plate

†Only collected from 6 households

Ongoing Research

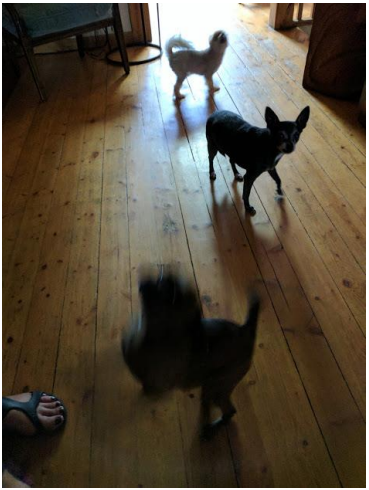
- Isolate and classify FLA from all collected samples
  - Walk-out plating method
  - Molecular methods
- Investigate whether households colonized by FLA capable of harboring *H. pylori* have an elevated prevalence of *H. pylori* infection
  - Previously collected data

Acknowledgements

- CAN*Help* Working Group
- Dr. Nicholas Ashbolt & the Ashbolt lab

- Dr. Brendan Hanley, YT Chief Medical Officer of Health, and government partners in YT and NT

- Planning committees and participants in Ross River, Teslin, Fort McPherson, Aklavik, and Old Crow
    - Daylce Huot (Teslin)
    - Theresa Tom (Ross River)
    - Winnie Greenland (Fort McPherson)



Thank you for listening!

Any Questions?

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References

1. Prazeres JM, Flávio H, Vivian S, Freitas D, Fabio C, Annette F. Comparative Evaluation Of Confocal Microscopy And Culture Results In The Diagnosos Of Acanthamoeba Keratitis. Investigative Ophthalmology & Visual Science. 2011;52(14):5835. Retrieved from: http://iovs.arvojournals.org/article.aspx?articleid=2358286