

# Description and evaluation of influences on childhood diarrhea in rural Western Ghana

Rachel Whitesitt<sup>1,2</sup>; Diana Rickard, MD, MSHS<sup>3</sup>; Jeanine Abrons, PharmD, MS, FAPhA<sup>1</sup>

1. University of Iowa College of Pharmacy, 2. University of Iowa College of Public Health, 3. UCLA Department of Pediatrics and GHEI

## Introduction

- Diarrhea is a leading cause of death in children <5 years of age. In 2008 alone, more than 1.3 million children died from diarrhea.<sup>1</sup>
- Contaminated water can transmit communicable diseases such as diarrhea.
- Households with less consistent access to improved water sources have been shown to have higher rates of childhood diarrhea<sup>2</sup>.
- The Western Region of Ghana has shown lower usage of improved drinking water sources compared to other regions<sup>3</sup>.
- GHEI has done work previously with handwashing and childhood diarrhea treatment but has not looked extensively at causes of diarrhea.

## Objectives

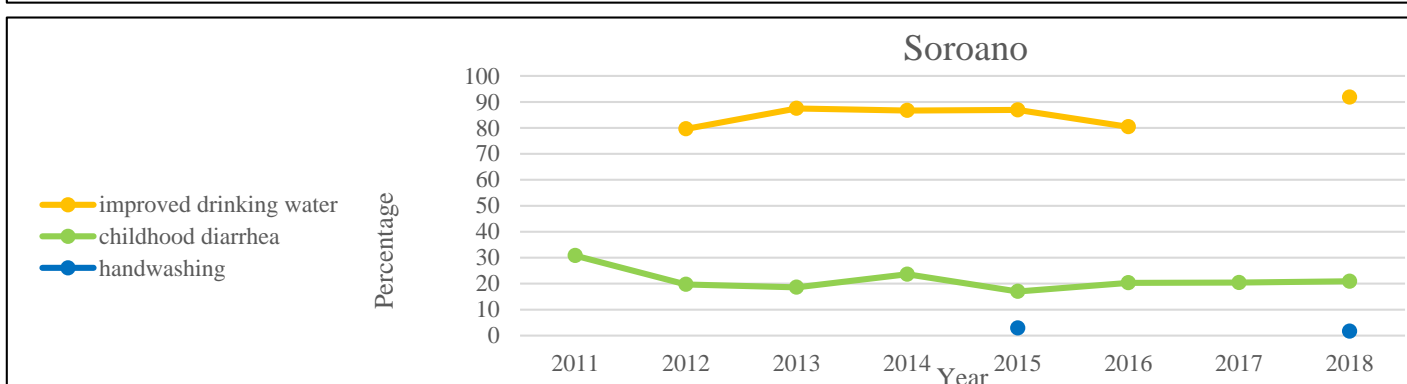
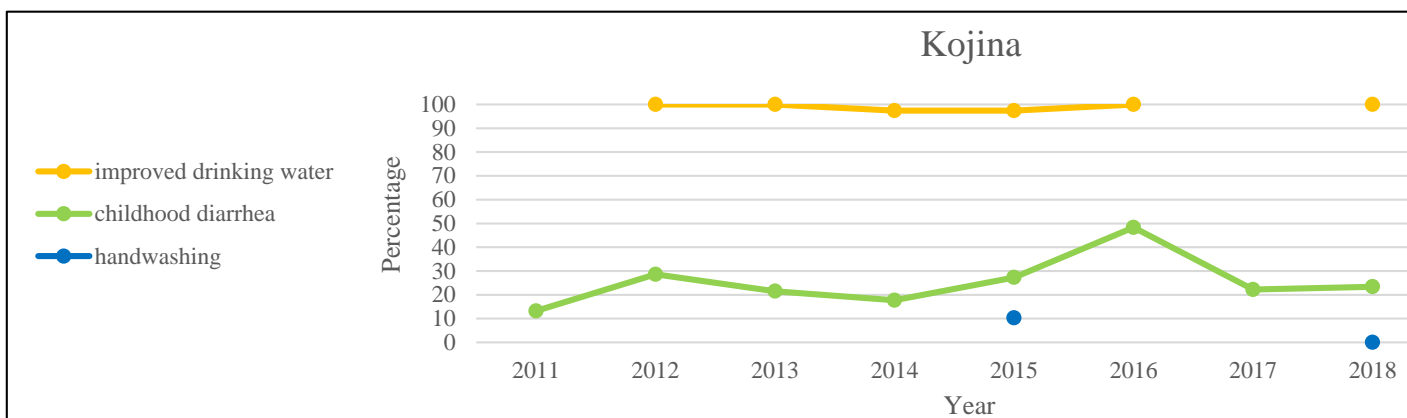
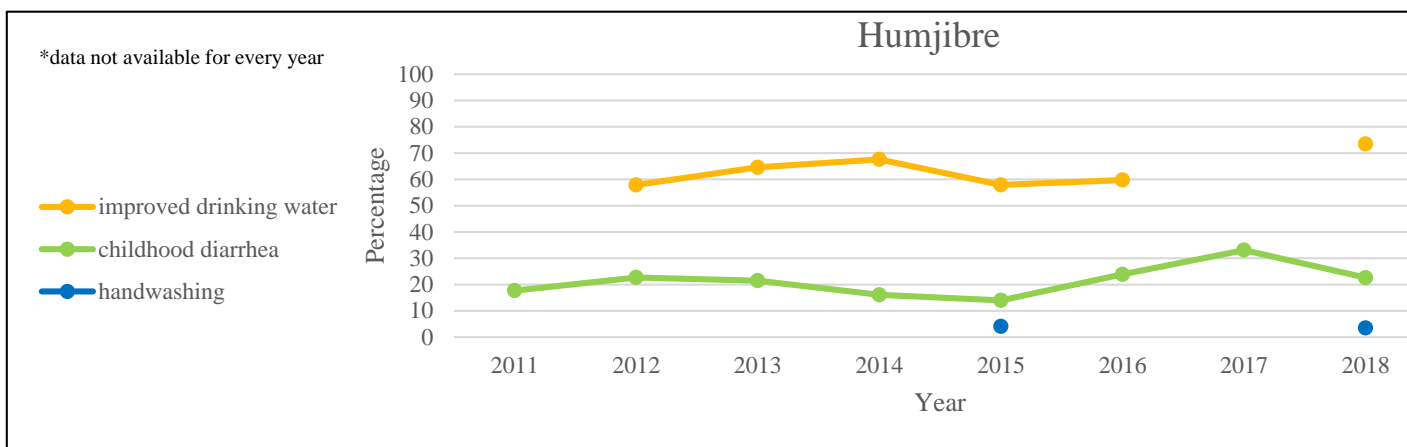
- For the people in the Bibiani-Anhwiaso-Bekwai region of Western Ghana:
  - Determine where people get their drinking water
  - Evaluate the amount of households with a handwashing station
  - Explore associations between childhood diarrhea and access to improved water sources

## Methods

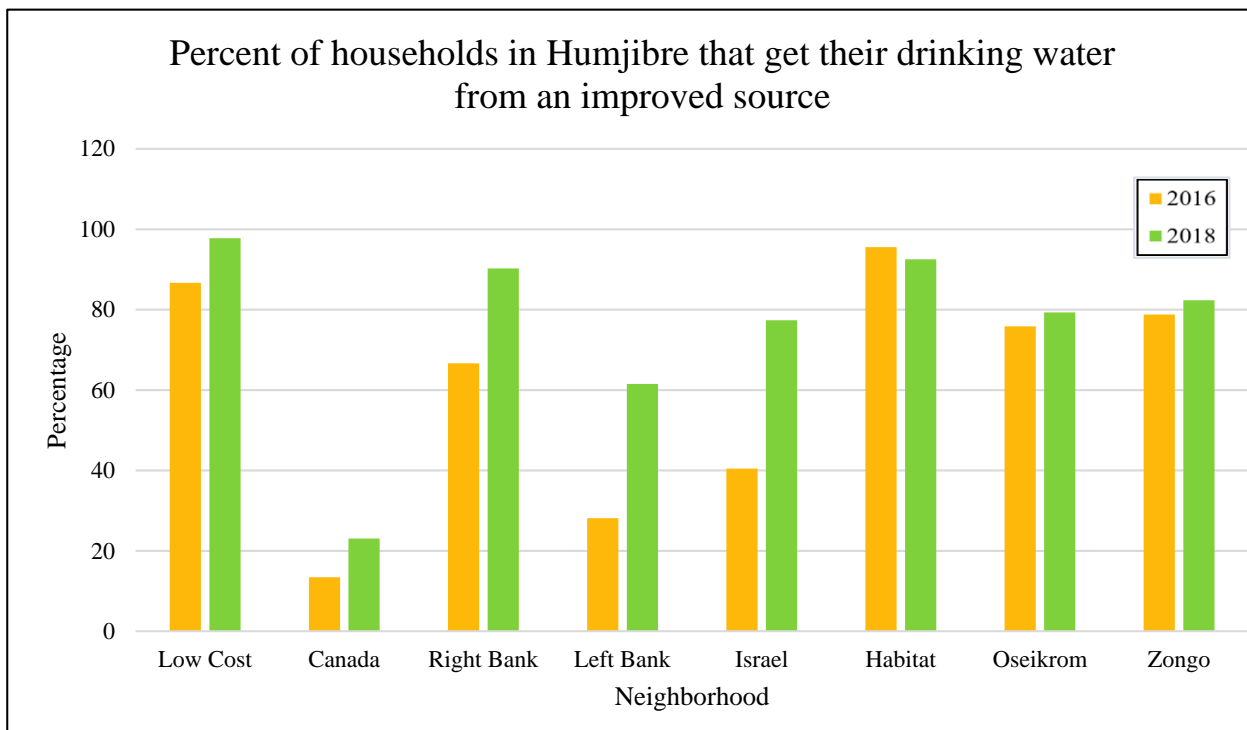
- Retrospective analysis of a health assessment questionnaire done annually in rural Western Ghana
- Random sample from three villages (Kojina, Soroano, and Humjibre) in the Bibiani- Anhwiaso-Bekwai region was given the questionnaire
- Questions pertinent to this project include drinking water, handwashing, and childhood diarrhea. Many other topics were also covered in the questionnaire.
- Compared trends in incidence of childhood diarrhea, drinking water quality, and knowledge of handwashing practices from 2011 to 2018

## Results by village (Kojina, Soroano, Humjibre)

Drinking water source for households in Bibiani-Anhwiaso-Bekwai region		
Drinking water source	% of households, 2011	% of households, 2018
<b>Unimproved<sup>3</sup></b>		
Abura/community hand dug well	11	3.5
Asuwa/natural water source	13	16.5
<b>Improved<sup>3</sup></b>		
Borehole/pipe	75	78.4
Rainwater collection	0.36	0.2
Boiled water	0	0.2
Treated water	0	0
Pure water/sachet	0.64	0.8
Bottled water	0	0.4



## Results by neighborhoods in Humjibre



Percent of children under 5 in Humjibre with diarrhea in the last two weeks by neighborhood	
Neighborhood	% of children
Low-Cost	5.75
Canada	22
Right Bank	10
Left-Bank	20.75
Israel/Clinic	8
Habitat	18.5
Oseikrom	8
Zongo	7

## Discussion/Conclusion

By village

- Many households still get their drinking water from an unimproved source.
- Boreholes and pipes are a main source of drinking water for the community due to increased construction.
- The percent of households with improved drinking water has slightly increased from 2011 to 2018.

By neighborhood

- Canada has the lowest percentage of households with drinking water from an improved source.
- Almost every neighborhood has seen an increase in the percent of households with safe drinking water.
- Three neighborhoods have higher percentage of children with diarrhea than the average.

Overall

- On average, neighborhoods in Humjibre with a lower percent of households with safe drinking water have a higher percentage of children with diarrhea.

Limitations & Future Work

- This study has a small sample size.
- Other factors such as breastfeeding & rotavirus vaccination rates were not analyzed.
- Future work should include analyzing other risk factors for childhood diarrhea in this community.

## References

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### Acknowledgements

Christina Schuler, Clement Donkor, Mensah Gyapong, Agnes Obeng, Enock 'Happy' Nkrumah, Lawrence Donkor, Ernest 'Saga' Badu, Obeng Daniel Bright