SaniPath Tool Results

Exposure to Fecal Contamination in 3 Low-Income Urban Settings

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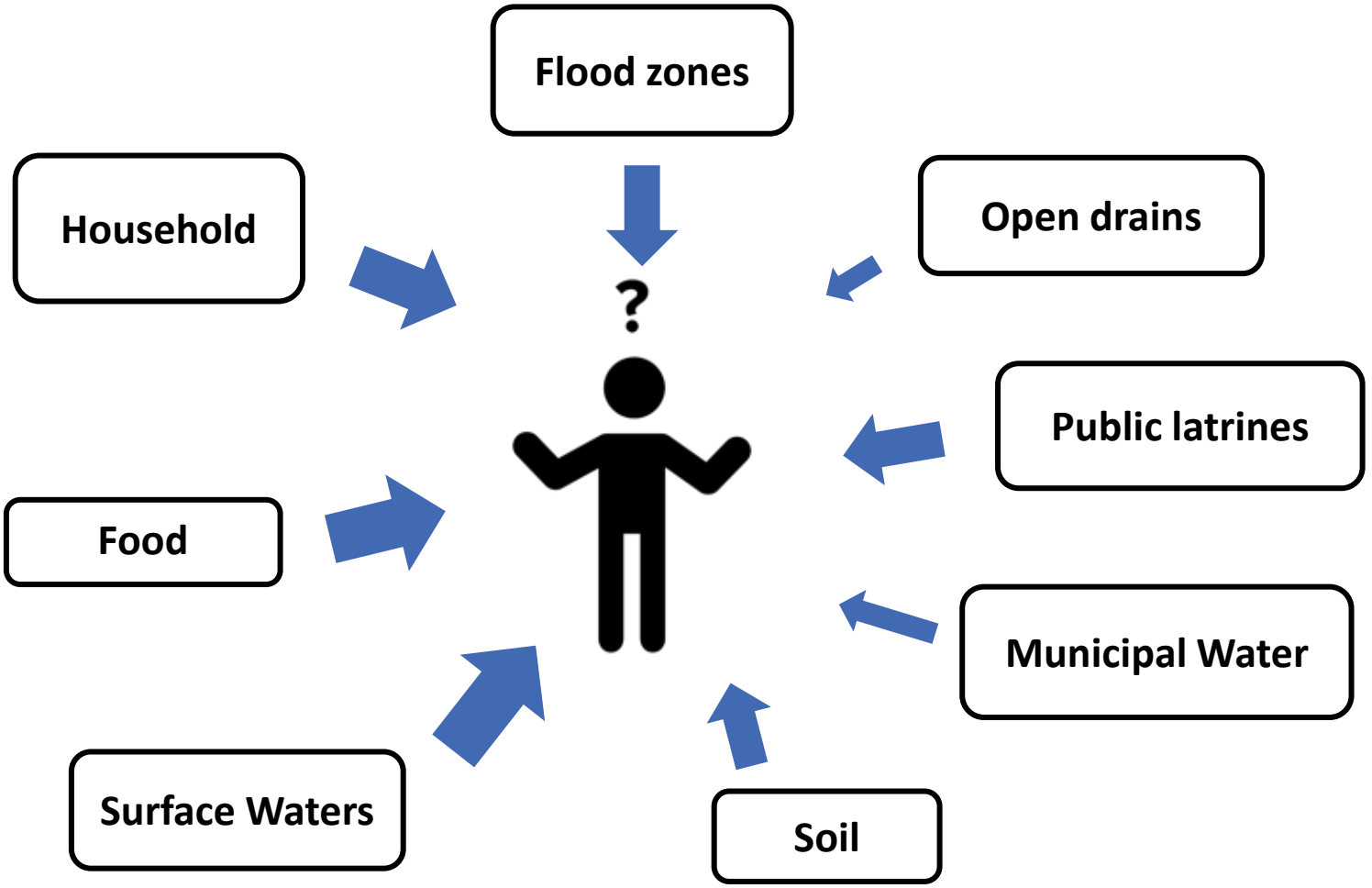
Risk of Exposure

Which pathways pose the greatest risk of exposure?



Confused designed by Jessica Look for The Noun Project

Overview

The SaniPath Exposure Assessment Tool

- Assesses relative public health risks related to poor sanitation and FSM
- Guides data collection & analysis
- Can help prioritize programs and policy

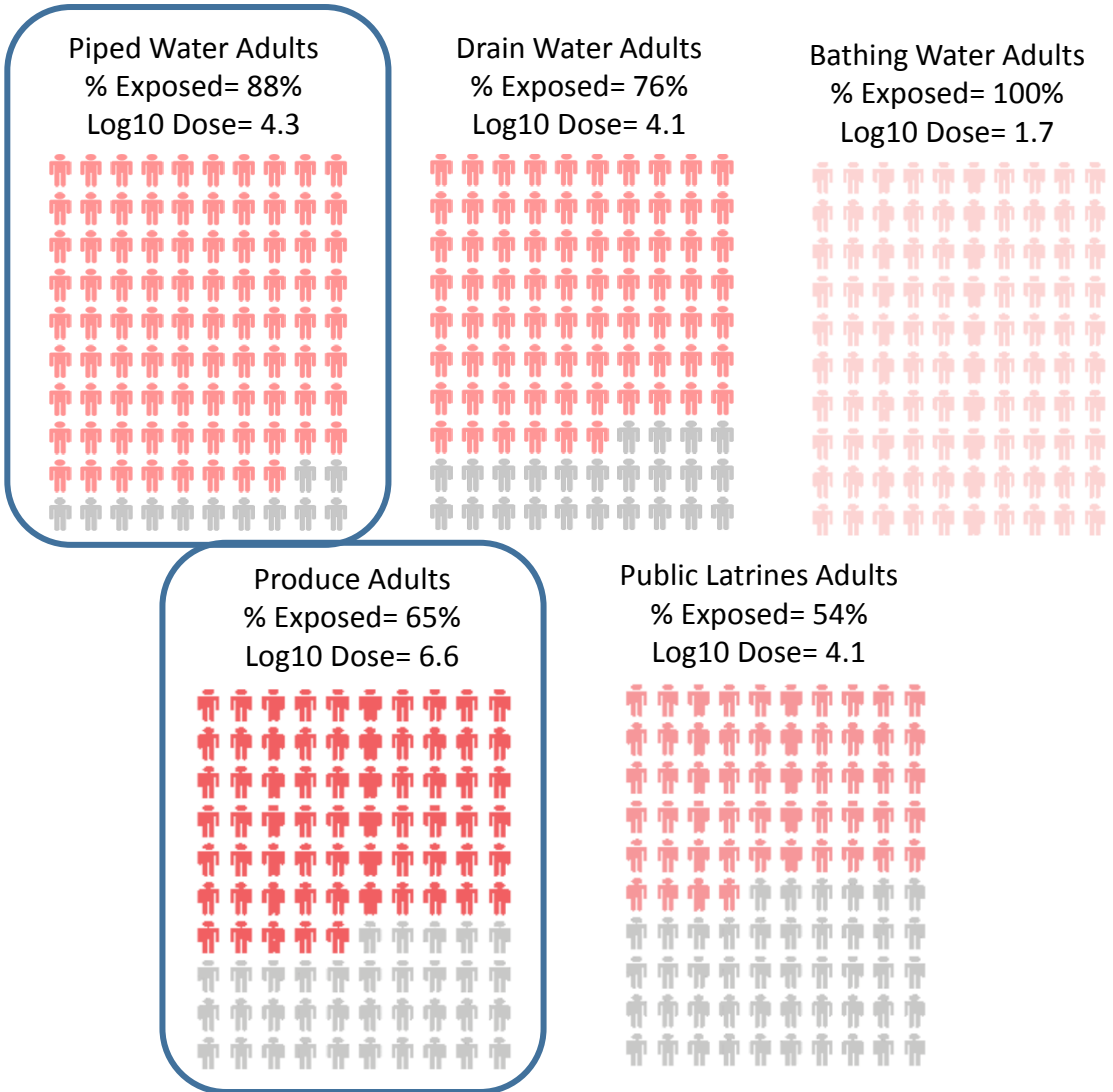
Methods

SaniPath Field and Analysis Methods

- Field Work
  - Environmental Samples
  - Behavioral Surveys
  - GPS data
- Lab
  - Test samples for *E. coli*
- Analysis
  - Estimates % population exposed and mean dose

SaniPath Results

People plots show variation across pathways within a neighborhood



Research Questions

- How **consistent** are the results of a SaniPath exposure assessment?
- How do fecal exposure pathways **vary across neighborhoods** in different cities?

Question 1

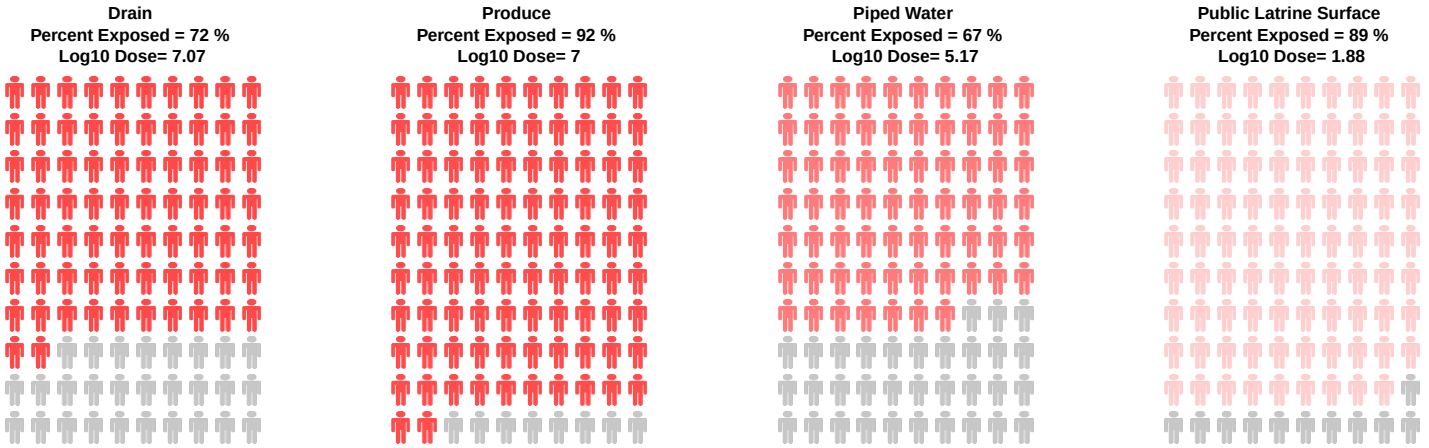
Examining the Consistency of SaniPath Results

1. Is the risk ranking of pathways similar?
2. Are the risk estimates similar (percent of exposed population and magnitude of exposure)?
3. If different, where are the differences and why?

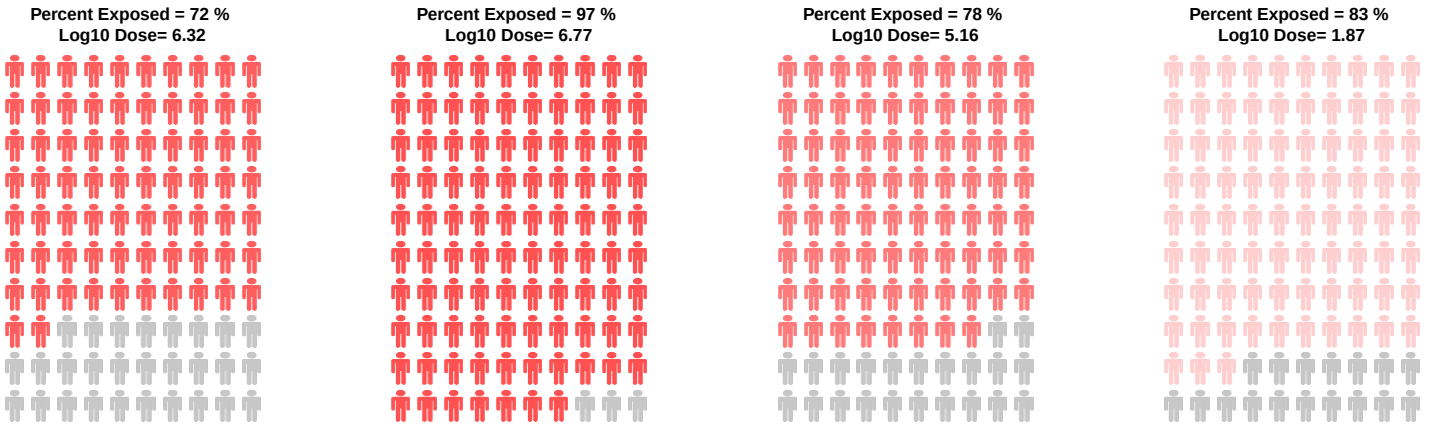
Comparing Simultaneous Parallel Deployments

Two teams collect data simultaneously in Chorkor, Accra, Ghana

Team 1



Team 2



Results look nearly identical-suggesting good consistency

Comparing Deployments from Two Different Years

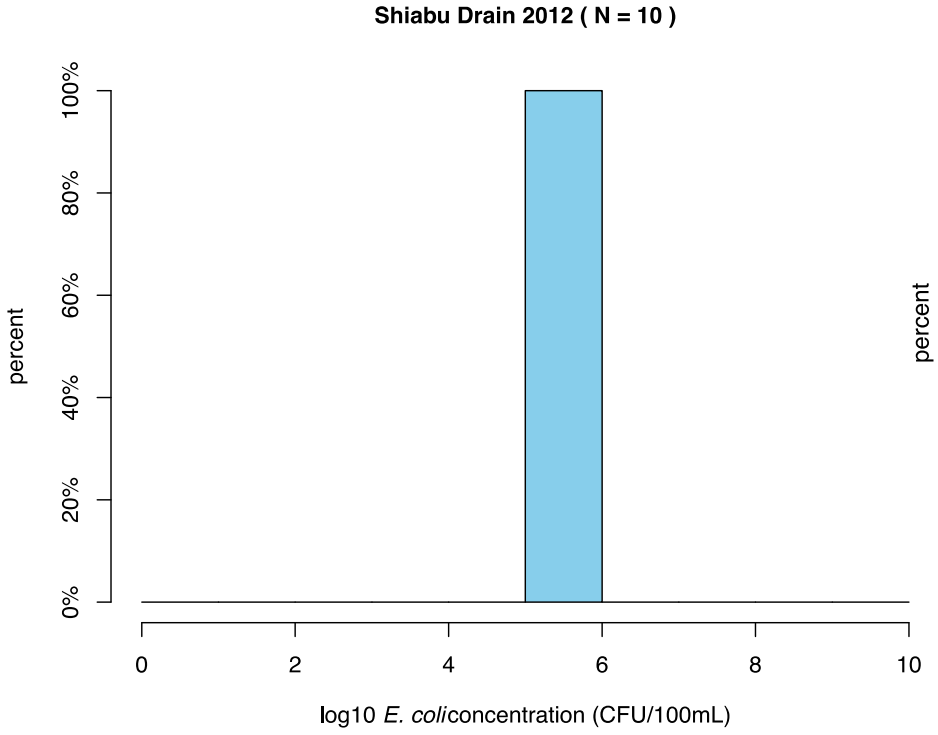
Comparing 2012 and 2016 results for pathways in Shiabu, Accra, Ghana

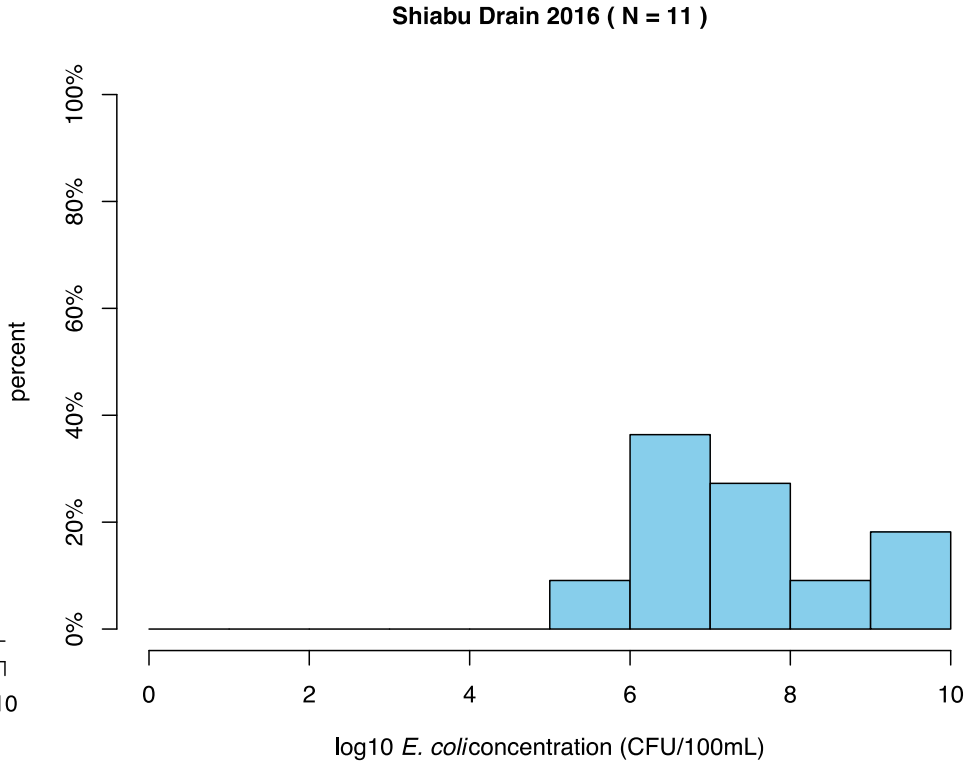
Risk profiles for drains are different

Other risk profiles are nearly identical

A Deeper Look

Comparing Drain results from Shiabu in 2012 and 2016





E. coli concentrations in drain samples were at upper limit of detection in 2012.

Dilutions of drain samples were adjusted in 2016 and *E. coli* concentrations were quantified more accurately

Question 2

Three pathways, three cities

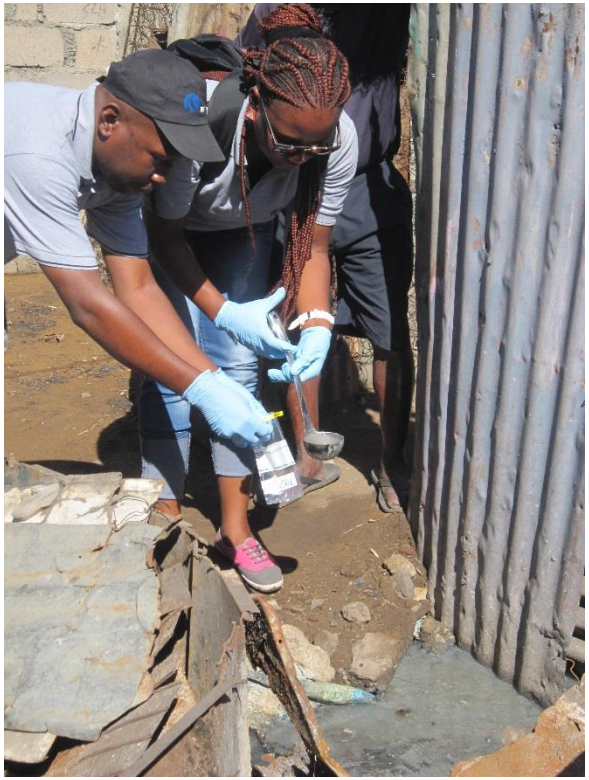
		Shiabu, Accra	Old Town, Vellore	Maxaqene, Maputo
Greatest variability was in drain pathway.	**Drains**	Percent Exposed = 70 % Log10 Dose= 7.56	Percent Exposed = 76 % Log10 Dose= 4.1	Percent Exposed = 56 % Log10 Dose= 6.34
Moderate fecal contamination but high % exposed to drinking water	**Drinking Water**	Shiabu, Accra Percent Exposed = 72 % Log10 Dose= 3.83	Old Town, Vellore Percent Exposed = 88 % Log10 Dose= 4.25	Control, Maputo Percent Exposed = 100 % Log10 Dose= 4.12
Produce is consistently highly contaminated, but % exposed population varies by city	**Produce**	Shiabu, Accra Percent Exposed = 92 % Log10 Dose= 6.69	Old Town, Vellore Percent Exposed = 65 % Log10 Dose= 6.59	Control, Maputo Percent Exposed = 100 % Log10 Dose= 14

Question 2

Drains in Accra, Vellore, and Maputo

Accra, Ghana

Vellore, India



Maputo, Mozambique

Summary

- Fecal contamination varies across pathways in a single neighborhood
- Good consistency in risk profiles
- Exposure to fecal contamination varies across pathways for 3 different cities

Information on geographic and pathway differences can be used:

1. For **advocacy** to raise awareness about the risks from poor sanitation and FSM
2. To **target investments** to areas/pathways of greatest risk.

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Study Communities

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Thank You

For more information visit
SaniPath.org


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