

**Assessing the risk of *Legionella* infection through showering with untreated rain cistern
water in St. Thomas, Virgin Islands**

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Supplementary Information

Table S1. Aerosol inhalation deposition rates in the alveolar-bronchilar region of the lungs (Zhou, Benson, Irvin, Irshad, & Cheng, 2007).

Showerhead flow rate (L/min)	Hot shower inhalation deposition rate (mg/min)		Cold shower inhalation deposition rate (mg/min)	
	Nasal Breathing	Oral Breathing	Nasal Breathing	Oral Breathing
5.1	0.036	0.297	0.002	0.005
6.6	0.049	0.357	0.003	0.008
9	0.044	0.364	0.001	0.007

Household Water Resource Survey

Date: _____

Location: _____

Survey Information:

The University of California, Irvine is conducting a survey about Hurricanes Irma and Maria. Your responses will help us understand how people are coping with the disaster impacts. The study aims to find ways to improve disaster preparation and recovery efforts. All information you provide will be kept confidential. The interview will last about 30 mins. You have to be 18 or older to participate. If at any time you wish to stop the interview or not answer a specific question, this is entirely up to you. If you have any questions or concerns about the study, please contact Dr. Sunny Jiang of the University of California, Irvine at sjiang@uci.edu or 949-824-5527.

1. After the hurricanes, do you have running water in your home?
 - Yes
 - No

2. After the hurricanes, where do you now get your water from for daily use (check all that apply)?
 - Tap water
 - Bottled water
 - Collect rainwater
 - Use water at neighbor's home
 - Other sources; please list: _____

3. If you get tap water, what do you use it for (check all that apply)?
 - Drinking without treatment
 - Drinking after boiling
 - Drinking after other treatments in my house
 - Washing hands
 - Brushing teeth
 - Washing dishes
 - Washing food that eating raw
 - Showering and bathing

4. Do you use bottled water for any of the following (check all that apply)?
 - Drinking
 - Brushing teeth
 - Washing dishes
 - Washing food that eating raw
 - Washing hands

5. If you use bottled water, how much do you spend?
\$ ____ per week
Do you wait in line to get bottled water? ____ minutes waiting in line each week
6. How many hours per day that you have running water in your tap in the past two weeks?
- Less than two hours per day
 - Less than 4 hours per day
 - Between 4 and 23 hours per day
 - 24 hours per day
7. If you use tap water for drinking or cooking, do you treat it?
- Boil water Time per day: ____ minutes
 - Add chlorine (or other chemical)
 - Use a water filter Cost of filter: \$ ____
 - Other, please list: _____
8. Do you store water?
- No
 - Yes → If yes, how do you store water: In bathtub In sink In containers
9. How safe do you think your water is?
- Very unsafe (serious health risk)
 - Somewhat unsafe (some health risk)
 - Safe (no health risk)
10. Does your water look dirty or taste bad (check all that apply)?
- Looks bad
 - Tastes bad
 - Neither
11. Do you think the government has done enough to let you know the safety of the water?
- Yes
 - No
12. Do you think the government has done enough to provide you with the safe water supply?
- Yes
 - No
13. Have you heard of the advisory from the government for boiling water?
- Yes
 - No
14. Normally, what is your monthly water bill? \$ ____ per month

15. Please rank the issues below that you think government should address first after the events of Irma and Maria (rank 1 to 5; 1 is the most important).

- ___ Restore communication (cell phone, internet)
- ___ Restore electricity
- ___ Make sure local water is safe for people to use
- ___ Restore roads and transportation
- ___ Restore police service and security situation

Your household

16. How many people in your household? _____ people
How many adults (18+ years old): _____ adults
How many children: _____ children

17. Has anyone in your household been sick that you think might be related to food or water?

- Yes → How many days were they sick? _____ days
- No

18. What is your annual income for the entire household? (Normal income, before the hurricanes)

- less than \$10,000
- \$10,001- 25,000
- \$25,001- 40,000
- \$40,001- 60,000
- \$60,001- 80,000
- more than \$80,000

19. What is the main source of income in your household (check all that apply)?

- Food services
- Hotel services
- Business owners of service industry
- Tourist services
- Other

20. What type of income do you have?

- Wage (hourly or daily)
- Salary (fixed amount, each year)
- Own your business

21. Has anyone in your household been out of work after hurricanes without pay?

- No
- Yes → If yes: How many people are out of work? _____ people
For how many weeks? _____ weeks
How much income have they lost? \$ _____ per week

22. Have you completed:
- Elementary school (8th grade)
 - High school
 - College
23. Type of home you live in:
- Apartment
 - Single-family home, detached
 - Multiple family home; townhouse; condo
 - Other, please list: _____

24. Do you own or rent your home:
- Own
 - Rent
 - It's my relatives or friends' home
 - Other

25. How many times have you been affected by a hurricane (not counting the hurricanes this year)? _____ times

Impacts of Hurricanes

26. Were any of your motor vehicles damaged during Hurricanes Irma and Maria?
- No
 - Yes → If yes: Vehicle type: Car Truck Motorcycle
 Age of vehicle: _____ years
 Cost to repair: \$ _____
 Too damaged to be repaired (completely destroyed)? No Yes

27. Have you repaired, cleaned, or replaced items in your home?

	Time your household spent cleaning & repairing (days)	Money you spent to clean, repair, and replace (\$)
TOTAL you've spent:	_____ days	\$ _____
<input type="checkbox"/> Furniture (Tables, chairs, sofa, beds, cabinets)	_____ days	\$ _____
<input type="checkbox"/> Appliances (refrigerator, stove, dishwasher, washing machine, clothes dryer)	_____ days	\$ _____
<input type="checkbox"/> Fans, air-conditioner, lighting, electrical wiring, plumbing, septic	_____ days	\$ _____
<input type="checkbox"/> Electronics: television, computer	_____ days	\$ _____
<input type="checkbox"/> Clothing; Kitchenware (pots, plates)	_____ days	\$ _____

- Flooring, carpet, walls, doors, windows _____ days \$ _____
- Roof; exterior or interior painting; garden _____ days \$ _____
- Other, please list: _____ _____ days \$ _____

28. What items did you need to buy or spend money on because of the disasters?

	Total Spent (\$)	Time Waiting in Line
<input type="checkbox"/> Generator	\$ _____	_____ minutes
<input type="checkbox"/> Fuel for generator	\$ _____	_____ minutes
<input type="checkbox"/> Batteries, Solar powered devices, lighting, flashlights	\$ _____	_____ minutes
<input type="checkbox"/> Gas for cooking; cookstove; barbecue grill	\$ _____	_____ minutes
<input type="checkbox"/> Food	\$ _____	_____ minutes
<input type="checkbox"/> Water filter, water treatment (chlorine, other chemical)	\$ _____	_____ minutes
<input type="checkbox"/> Container to store water	\$ _____	_____ minutes
<input type="checkbox"/> Tents; other temporary dwelling	\$ _____	_____ minutes
<input type="checkbox"/> Other, please specify		
1.....		
2.....		
3.....		

29. Did your household receive aid (check all that apply)?

Who provided aid:	Aid received:
<input type="checkbox"/> Government <i>(U.S. Government; Virgin Islands; Federal Emergency Management Agency)</i>	<input type="checkbox"/> Money: \$ _____ <input type="checkbox"/> Loan: \$ _____ <input type="checkbox"/> Supplies or services
<input type="checkbox"/> Charity or Non-profit <i>(Red Cross, church group, etc.)</i>	<input type="checkbox"/> Money: \$ _____ <input type="checkbox"/> Loan: \$ _____ <input type="checkbox"/> Supplies or services
<input type="checkbox"/> Family or friends	<input type="checkbox"/> Money: \$ _____
<input type="checkbox"/> Neighbors; Community	<input type="checkbox"/> Loan: \$ _____ <input type="checkbox"/> Supplies or services
<input type="checkbox"/> Your employer	<input type="checkbox"/> Money: \$ _____

Flood insurance

Bank

Loan: \$ _____

Supplies or services

Money received from insurance:

\$ _____

Loan: \$ _____

30. Did you evacuate from your home due to the hurricane?

No

Yes

→ If yes: How long did you leave your home? ____ weeks

Have you returned to your home? No Yes

Why did you evacuate (check all that apply)?

No electricity in home

No water in home

Crime

Home too damaged to live in

Other, please list: _____

Are you willing to answer 5 minutes of follow-up questions, 4 months from now? If so, please let us know how to contact you: Email: _____ Cell phone: _____.

Thank you again for participating!

If you have questions or concerns about your rights as a research participant, you can contact the UCI Institutional Review Board by phone, (949) 824-6662, by e-mail at IRB@research.uci.edu or at 141 Innovation, Suite 250, Irvine, CA 92697.

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