


# MPH Summer Practicum: Lead Water Testing Project



Columbia Center for Children's  
Environmental Health

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COLUMBIA CENTER  
FOR CHILDREN'S  
ENVIRONMENTAL  
HEALTH


MAILMAN SCHOOL OF PUBLIC HEALTH  
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## Introduction

- MPH Candidate at Columbia University  
Mailman School of Public Health
- Sociomedical Sciences Department with a  
Certificate in Health and Human Rights
- San Francisco State University, B.S Biology  
Physiology, Minor: Chemistry
- UC San Diego, Post-Baccalaureate, Pre-  
Medicine
- My interests are community-oriented  
research, advocacy, and health equity



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## Agenda

- Background
- Objectives
- Project Overview
- NYC Drinking Water Standards - Lead
- Data Analysis and Results
- Outreach and Progress
- Accomplishments
- Challenges and Limitations
- Timeline and Future Steps
- Acknowledgements



## Background

- The Columbia Center for Children's Environmental Health (CCCEH) Community Outreach and Research Translation Core (COTC) conducted a needs assessment in 2021 in **Harlem, South Bronx, Washington Heights** communities.
- After reviewing findings, community members wanted more of a focus and emphasis on lead.
- One project we initiated from this feedback is the **lead water testing project** to continue to explore issues with lead in the communities CCCEH engages. Specifically, this includes, our study participants and the members of our Community Advisory and Stakeholder Board (CASB) partners.



## Objectives

- Review local NYC and federal water quality standards.
- Analyze NYC Open Data Set (NY Department of Environmental Protection) and observe trends in water quality in zip codes of interest.
- Actively engage with CASB member agencies, CBOs, and other community members in the Bronx, Harlem, and Washington Heights neighborhoods.
- Discuss importance of water safety, enhance knowledge of lead risk regulation and rights, and order lead water testing kits and collect results.
- Spread awareness of NYC Department of Environmental Protection's **free** water testing kit and encourage everyone, not just population of interest, to take advantage.



## Project Overview

- Review and Analyze NYC Department of Health water quality database via NYC Open Dataset.
- Filter current available data with zip codes of study participants from Fair Start & Mothers & Newborns studies looking at study participants and potential exposure levels to lead.
- Document findings
- Engage with CASB member agencies, CBOs, and other community members in the Bronx, Harlem, and Washington Heights neighborhood and educate on lead water safety and order Lead Water Testing Kits.
- Report back findings to CASB.



## NYC Drinking Water Standards - Lead

- The **federal Lead and Copper Rule** requires a public water system to test tap water from sites likely to have plumbing containing lead.
- In **New York**, If more than **10 percent of tap water tested exceed the lead action level of 0.015 milligrams per liter**, then a public water system is required to notify residents and take steps to reduce lead levels in the public drinking water supply.
- Bottled water suppliers must routinely test their water supply for lead. The **U.S. Food and Drug Administration** has established a maximum contaminant level of **0.005 mg/L for lead in bottled drinking water**.
- EPA Lead Regulations: [Basic Information about Lead in Drinking Water | US EPA](#)



## Zip Codes

### Mothers & Newborns Study

Participants per Bronx Zip Codes		Participants per Manhattan Zip Codes	
10037	1	10002	2
10451	11	10003	1
10452	17	10009	2
10453	23	10023	2
10454	6	10025	4
10455	7	10026	10
10456	16	10027	11
10457	9	10028	1
10458	5	10029	11
10459	6	10030	19
10460	7	10031	9
10461	2	10032	34
10462	1	10033	13
10463	7	10034	6
10465	2	10035	8
10466	3	10037	12
10467	9	10038	1
10468	11	10039	17
10469	4	10040	11
10470	2	Total	174
10471	1		
10472	9		
10473	9		
10474	2		
Total	170		

### Fair Start Study

Participants per Bronx Zipcodes		Participants per Manhattan Zipcodes	
10063	1	10001	1
10438	1	10003	1
10451	8	10023	1
10452	13	10024	1
10453	20	10025	1
10454	3	10026	2
10455	2	10027	3
10456	21	10030	2
10457	16	10031	13
10458	22	10032	27
10459	2	10033	15
10460	3	10034	36
10461	4	10035	1
10462	5	10039	8
10463	33	10040	22
10466	1	Total	134
10467	9		
10468	29		
10469	6		
10470	2		
10471	2		
10472	5		
10473	3		
10475	2		
10487	1		
Total	214		

Study Population by Zip Code  
 Red: 1-2 participants  
 Yellow/Orange: 3-10  
 Green: 10+



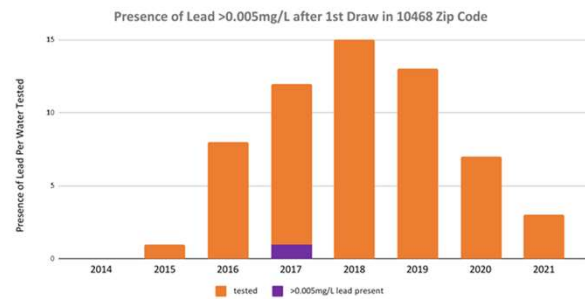
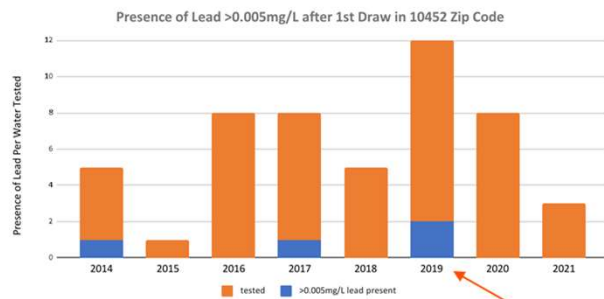
## NYC Open Data Set - Analysis

- The NYC Open Data Set, provided by the New York Department of Environmental Protection is updated every January for the previous year.
  - *2022 will be updated January 2023*
- Analyzed the open data set, organized data by zip codes of interest
- Created graphs to depict the presence of lead greater than or equal to **0.005mg/L\*** after 1st draw in most populated CCCEH study zip codes.
- Observed findings: mostly good, highest levels of possible lead exposure in more recent years are in the Bronx (10456 and 10463 zip codes.)

\*refer to slide 7



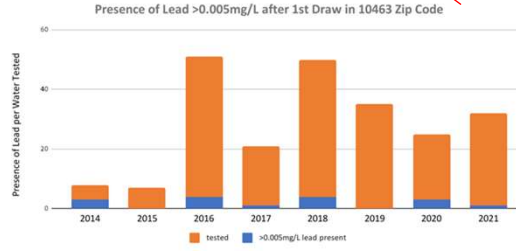
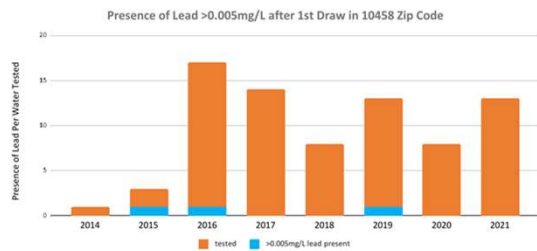
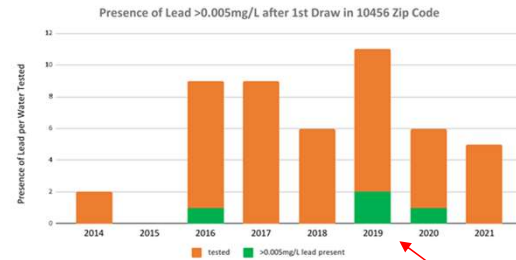
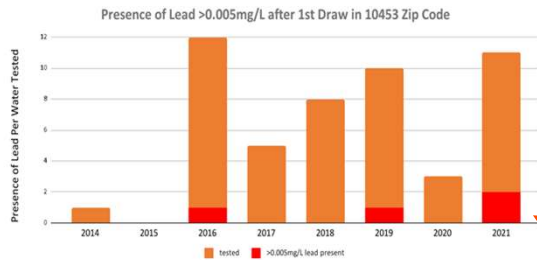
## Bronx



Data retrieved from: [Free Residential at-the-tap Lead and Copper Data](#)



## Bronx (cont.)

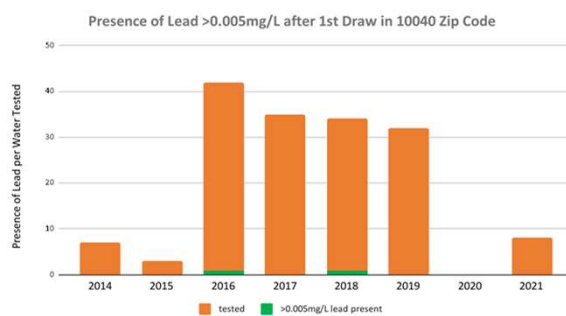


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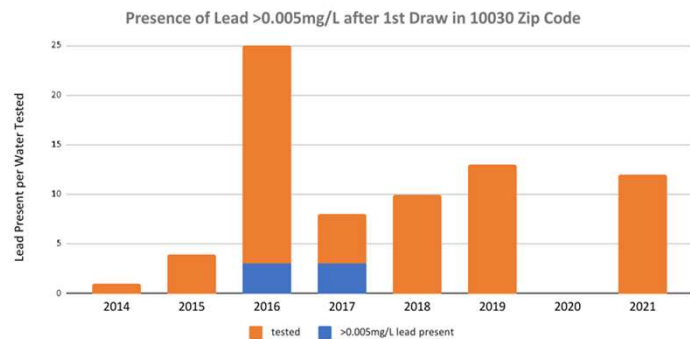
## Manhattan - (Harlem and Washington Heights)

### Washington Heights

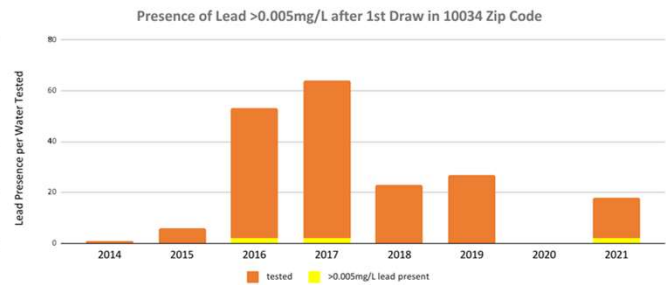
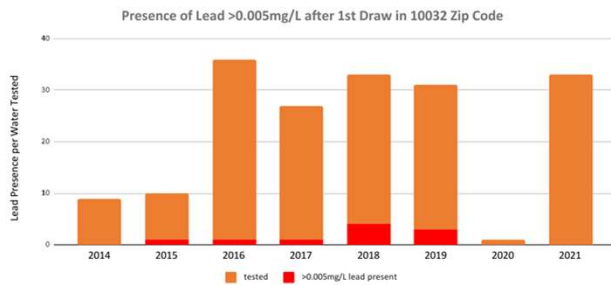


Data retrieved from: [Free Residential at-the-tap Lead and Copper Data](#)

### Harlem



## Washington Heights (cont.)



## Outreach

- **CCCEH/EHS**
- **Futures Ignite**
- **SYEP** - Summer Youth Employment Program
- **Youth Council**
- **College Prep Workshop**
- **NHHBC** - Neighbors Hand in Hand for a Better Community
- **FYI** - Fresh Youth Initiative
- **Lang Youth Medical Program**
- **Cardinal McKloskey**
- **DWDC** - Dominican Women's Development Center
- **El Nido**
- **Leave it Better**
- **Arc Philip Randolph Senior Center**
- **Dreamers (SYEP)**
- **Word Up Bookstore**
- **Gregorio Luperon**





## Progress

- CCCEH/EHS - 3 kits ordered
- Futures Ignite - 12 kits ordered
- SYEP - 5 kits ordered
- Youth Council - 6 kits ordered
- College Prep Workshop - 5 kits ordered
- NHHBC - 10 kits ordered
- FYI
- Lang Youth Medical Program
- Cardinal McKloskey
- DWDC
- El Nido
- Leave it Better
- Arc Philip Randolph Senior Center - 31 kits ordered
- Dreamers (SYEP) - 5 kits ordered
- Word Up Bookstore
- Gregorio Luperon



## Accomplishments!



- Reached over **16 organizations**, 56% engagement rate
- Over **70 participants** of all ages in Harlem, Washington Heights, and Bronx Neighborhoods ordered a test kit.
- Developed infographic in English and Spanish.
- Formed meaningful relationships with CASB member agencies, CBOs, and other community members.
- Connected with 2 new community organizations
- Developed **archival research skills, research implementation skills**, and conducted **policy analysis**.
- Informed and educated organizations and individuals on lead water prevention and protection.
- Informed community members of resources provided by the NYC Department of Environmental Protection.
- Encouraged community members to be **advocates** for themselves and their households by ordering a water test kit.





## Challenges and Limitations

- Maintaining contact with interested participants for the duration of the kit ordering process.
- COVID-19
- Bronx neighborhoods/zip codes



## Timeline and Future Steps

### Timeline:

#### Now:

- Follow up with contacts for updated progress
- Draft a written report



#### Future:

- Analyze participant data
- Report findings at CASB in December 2022/January 2023

### Future Steps:

- Provide resources to those, if any, with lead present in test results (e.g. [Monitoring for Lead - DEP](#))
- Contact Gregorio Luperon for student participation in the Fall (conducted session)



## Acknowledgements



**Dr. Julie Herbstman**



**Maricela Ureño, MPH**



**Anabel Cole MS, MPH**



## Sources

- *Department of Environmental Protection*. Free Residential at-the-tap Lead and Copper Data. (2022). Retrieved August 17, 2022, from <https://data.cityofnewyork.us/Environment/Free-Residential-at-the-tap-Lead-and-Copper-Data/k5us-nav4>)
- *Department of Health*. Lead in Drinking Water. (2022). Retrieved August 17, 2022, from <https://www.health.ny.gov/environmental/water/drinking/lead/#:~:text=If%20more%20than%2010%20percent,the%20public%20drinking%20water%20supply.>
- *Environmental Protection Agency*. (2022, May 25). *Basic Information about Lead in Drinking Water*. EPA. Retrieved August 17, 2022, from <https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water#:~:text=The%20Safe%20Drinking%20Water%20Act,percent%20for%20solder%20and%20flux>

