CHICAGO

Indoor Air Monitoring for Pathogens Chicago Public Library

Bureau of Disease Control

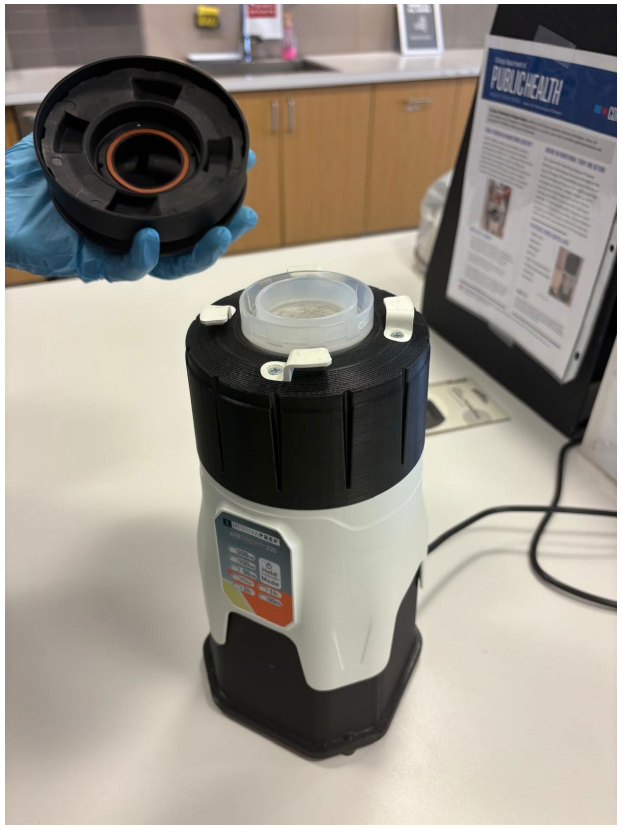
Lab-Based Surveillance Program

CDPH
Chicago Department of Public Health

The Air Monitoring for Pathogens Program began in February 2023 to assess trends of airborne pathogens.

- Serves as a complement to individual case-based testing and wastewater surveillance
- Can detect viruses and emerging variants
- Mobility of devices allows for targeted place-based surveillance
- Done in collaboration with the Regional Innovative Public Health Laboratory (RIPHL) at RUSH

RIPHL | REGIONAL INNOVATIVE PUBLIC HEALTH LABORATORY



Citywide Air Monitoring Status: 2025

Sampler placement

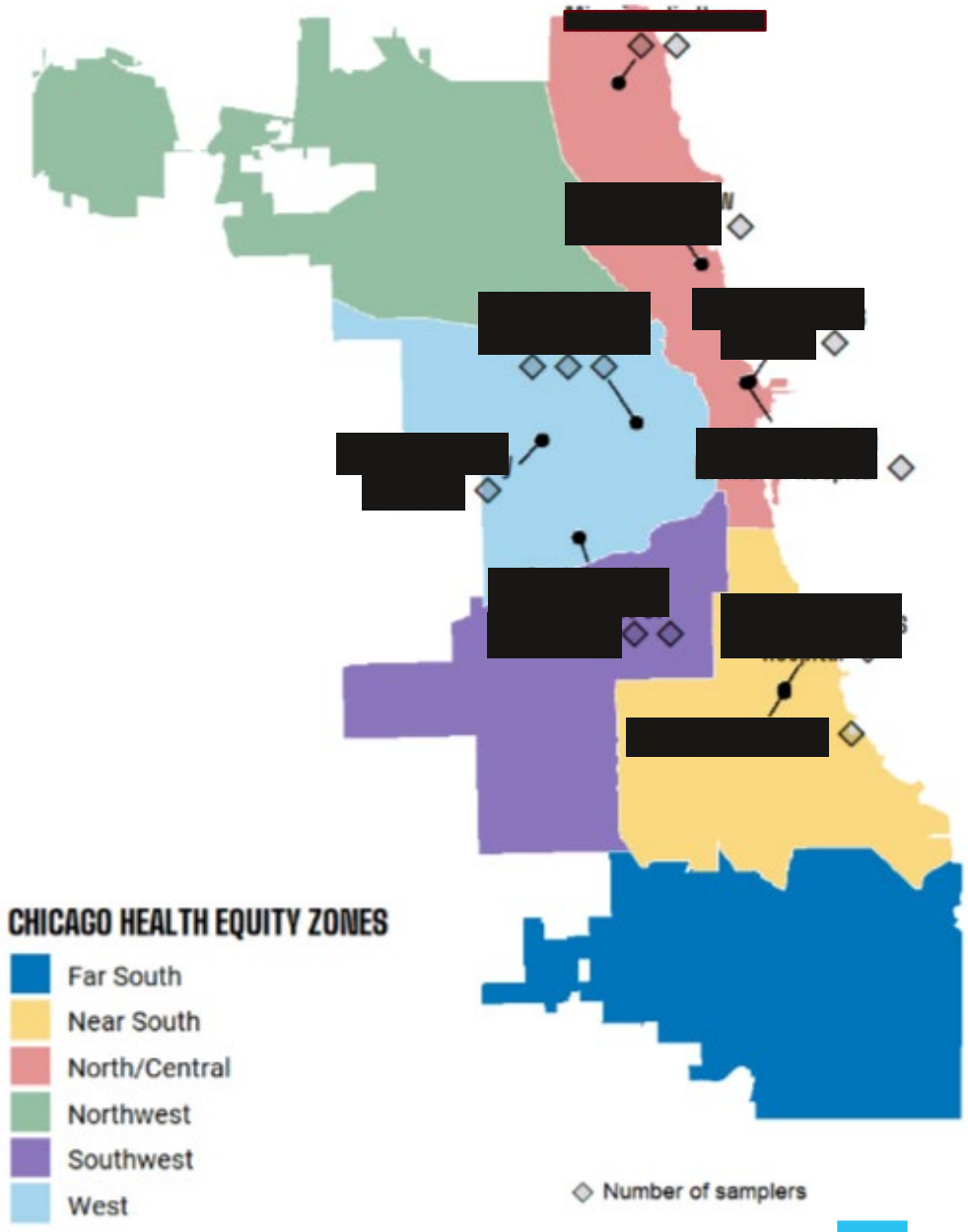
- 13 samplers placed across the City in 9 locations
- Sites include skilled nursing facilities, clinics, hospitals, and congregate settings

Current panel

- SARS-CoV-2
- RSV A/B
- Influenza A
- Influenza B

Positive feedback from sites

- Weekly cartridge exchange manageable for on-site staff
- No issues with noise or placement
- Lab methods improved throughout the program



The Air Monitoring for Pathogens Program has benefits for CDPH and individual facilities.

- **CDPH can use the information for:**
  - Early detection of viruses and novel variants
  - Citywide trend analysis of virus and variant circulation
- **Your facility can use the information for:**
  - A comparison to the rest of the city and similar locations
  - Complementing other surveillance methods (cases, wastewater)

Indoor Air Monitoring for Pathogens Process Overview

Partner Facility

RIPHL | REGIONAL INNOVATIVE PUBLIC HEALTH LABORATORY

CHI | CDPH Chicago Department of Public Health

Sample collection

- Weekly cartridge exchanges by on-site staff

Nucleic acid quantification

- Concentration and extraction
- PCR quantification

Sequencing of viable samples

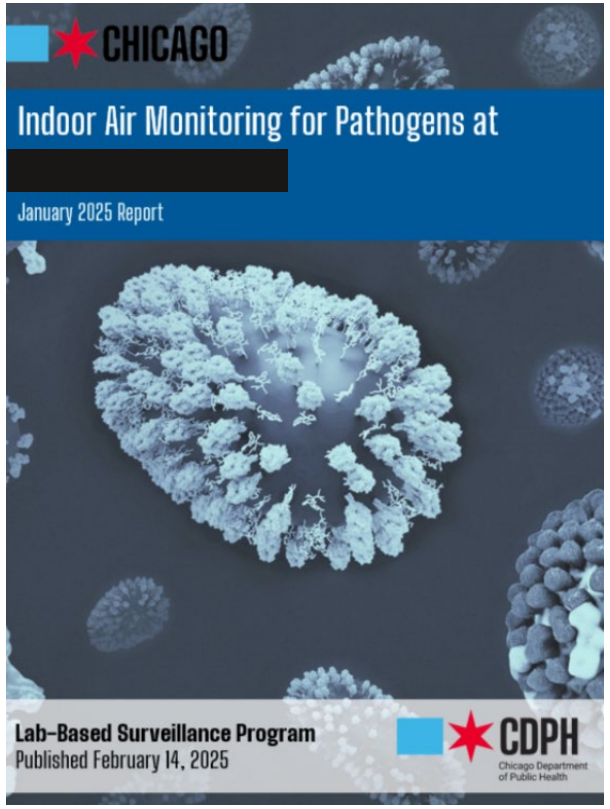
- Emerging variants and trends
- Comparison with clinical specimens

Monthly summary report

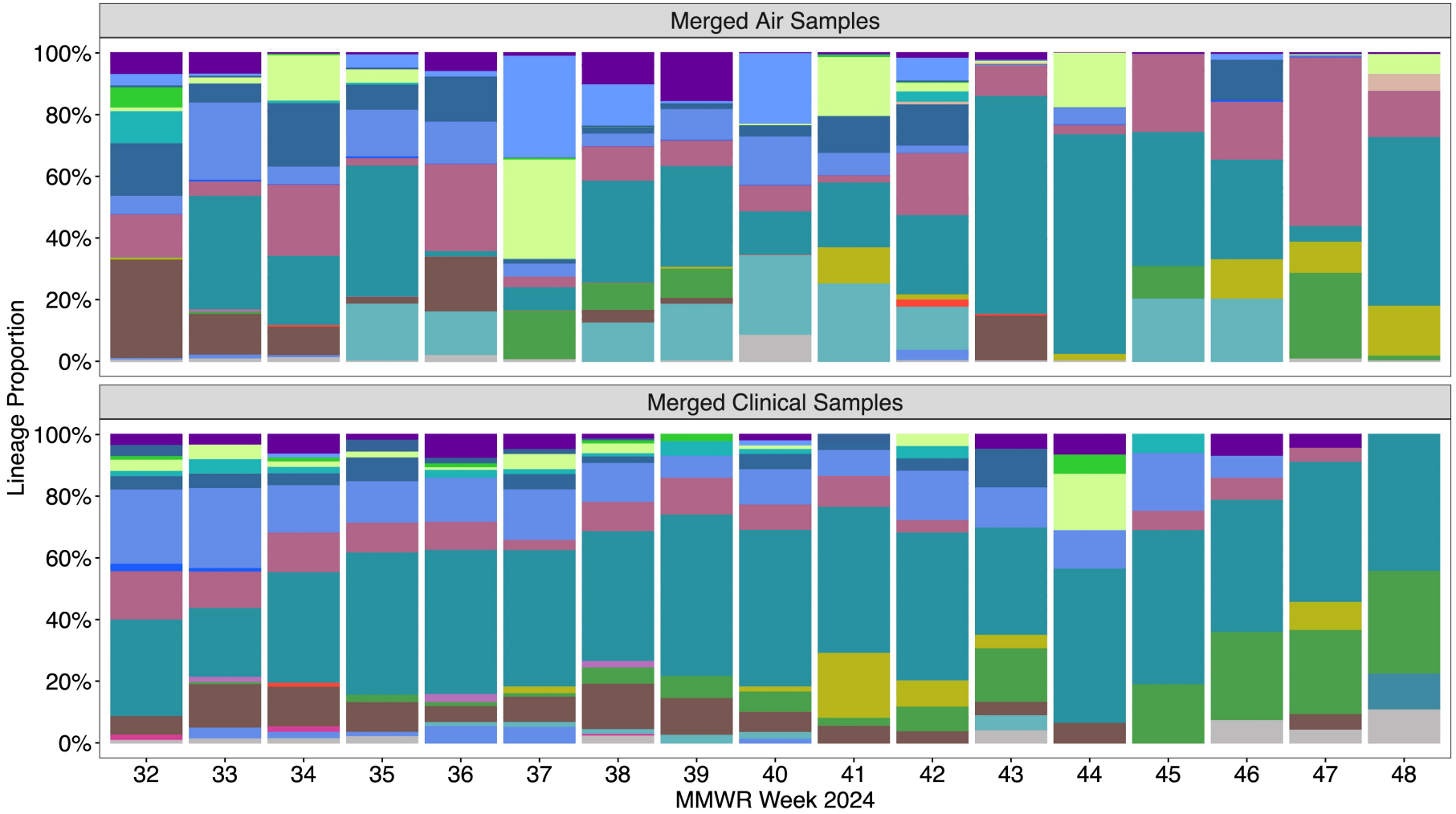
- Detections, Ct values, and sequencing results
- Citywide and site-specific data
- Distributed to sites and CDPH leadership

CDPH reports monthly results to each facility to show current and historical trends of all pathogens .

- Facility results are shared only with that facility and with CDPH leadership



SARS-CoV-2 sequencing is performed in viable samples and COVID-19 variants are reported and compared to other surveillance data.



Medium and Long-term Goals and Data Use

- Increase partner engagement and placement of samplers at diverse sites throughout the city
- Expand coverage across Healthy Chicago Equity Zones and demographic subgroups for trend analysis
- Integrate air monitoring data with other surveillance data
- Standardize data uses in different settings

Data Use Case	Current and Future Sites	Considerations
Trend Analysis	Clinical Settings, Emergency Departments, Public Gathering Spaces	Source of public summary data across geographies and populations
Early Detection	O'Hare, other transit hubs	Overlap with wastewater Metagenomic sequencing
Outbreak Prevention	Acute Care, Congregate Settings	Special deployments

Logistical Considerations for Sampler Placement

- Should be placed in a setting where people congregate, but out of the way to avoid tampering
- Place on a table at waist height or above
- Requires an electrical outlet
- Staff needed for weekly cartridge exchanges and shipments using a provided courier service

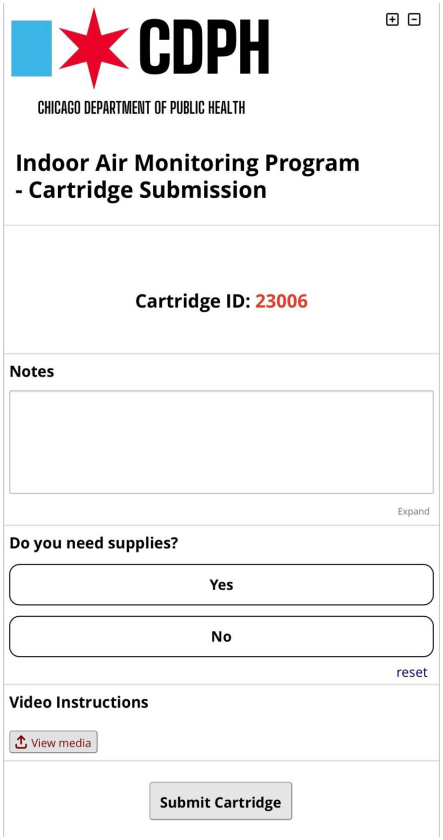
CDPH provides in-person training and step-by-step instructions for cartridge exchange and shipping.

CHICAGO

Chicago Department of Public Health: Indoor Air Monitoring for Pathogens

AirPrep Cub Sampler™ Procedures

Cartridge Exchange:



We are looking to partner with Chicago Public Libraries for this program.

CDPH will:

- Provide the sampler and cartridges
- Set-up the sampler and provide in-person training
- Provide courier service for weekly cartridge pick-up
- Provide monthly reports

Your sites will:

- Identify a primary point of contact and 1-2 individuals for cartridge exchanges
- Exchange and send cartridges once a week
- Give us any feedback about your participation and the program

CDPH
Chicago Department of Public Health

CHICAGO PUBLIC LIBRARY