Using Public Health Vending Machines to Overcome Access Barriers in Boston, MA

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BACKGROUND

In 2024, 169 Boston residents died from opioid overdoses, with disproportionately high impacts among Black and Latinx communities (Fig. 1). Systemic barriers limit access to naloxone and other overdose prevention supplies for these communities. Public health vending machines (PHVMs) are an innovative way to address barriers and improve access to these priority populations, thereby reducing overdose risk and injection-related infections.

With funding from the Overdose Data to Action (OD2A) program, the Boston Public Health Commission (BPHC) placed eight PHVMs at shelters, community health centers, community-based organizations, and BPHC facilities. First launched in 2024 six are located indoors, and two are located outdoors with 24/7-access (Fig. 2). One outdoor PHVMs is placed outside an emergency department and another is placed outside a community health center. One indoor machine is no longer active. Two indoor machines are also accessible 24/7. The Institute for Community Health (ICH) is Boston OD2A's evaluator and is conducting an evaluation of the implementation and reach of the PHVM initiative.

Figure 1. Rate of Fatal Opioid Overdoses by Neighborhood, 3-Year Aggregate (2022-2024)

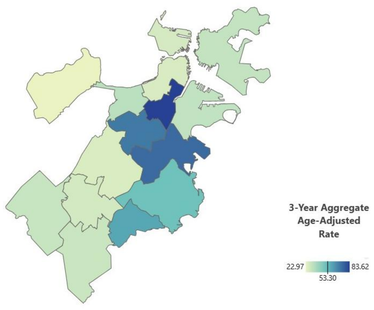
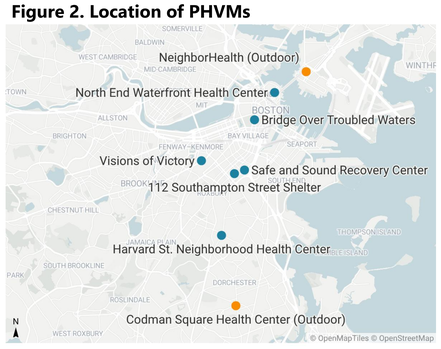


Figure 2. Location of PHVMs



METHODS

Data Collection

- All PHVMs have a digital interface and are equipped with software that generates detailed reports on time of access, items taken, and the ID code that users were assigned at registration. Data reports were received and reviewed by BPHC prior to sharing with ICH for additional analysis. Reports included in this analysis range from September 1, 2024, through August 31, 2026.
- Users of the six indoor vending machines were required to register for an ID code to access the machine. During registration, users were prompted to provide their demographic information through a survey. The two outdoor vending machines did not require registration; instead, users entered their ZIP code into the machine to access supplies.

Analysis

- Using the data collected by PHVMs, ICH conducted a descriptive analysis of supply distribution, time of use, machine use frequency, and user demographics (race/ethnicity, gender, age, sexual orientation, and neighborhood of primary residence).

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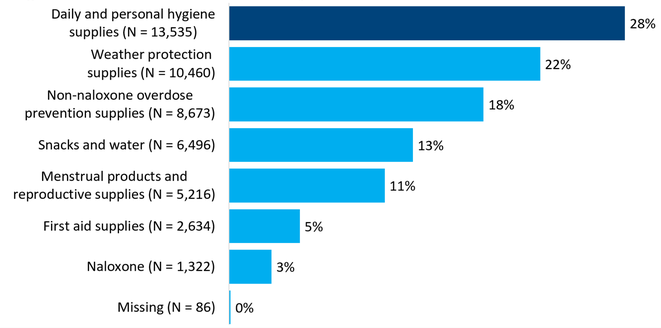
RESULTS

PHVM Implementation Metrics

7 PHVMs currently active (as of 10/2026), and 1 inactive (as of 2/2026)

- Type: Indoor (6), Outdoor (2)
- Location: Healthcare Organizations (4), Community-Based Organizations (2), Health Department (1), and Homeless Shelter (1)
- Hours of Operation: Business hours only (4), After-hours/24/7 access (4)

Figure 3. Total Items Distributed by PHVMs



PHVM User Demographics and Reach*

PHVM users and demographics

- Reach: Between September 2024 and August 2026, **585** individuals took at least one item from an indoor PHVM
- Engagement: 56% visited the indoor PHVMs more than once
- Race: 44% White, 23% Hispanic/Latinx, 22% Black/African American
- Gender: 53% Man, 44% Woman, 3% Other
- Age: 54% between 35–44 years old
- Sexual orientation: 78% Straight (Heterosexual), 11% Bisexual
- Top five home neighborhoods: South End, Dorchester, Roxbury, Outside of Boston, Charlestown

Time of Use of Naloxone and Other Overdose Prevention Supplies

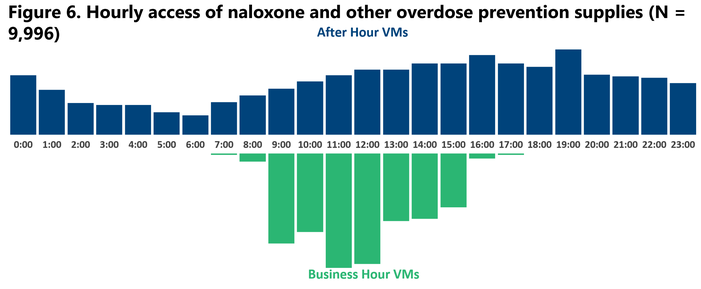
Figure 4. Time of week access of naloxone and other overdose prevention supplies (N = 9,996)

Time of Week	Business hours only access (4 VMs)	After hours access (4 VMs)
Weekday	3,179 (99.9%)	5,055 (74%)
Weekend	4 (0.1%)	1,757 (26%)

Figure 5. Time of day access of naloxone and other overdose prevention supplies (N = 9,996)

Time of Day	Business hours only access	After hours access
7:00 AM-12:59 PM	2,152 (68%)	1,586 (23%)
1:00 PM-6:59 PM	1,031 (32%)	2,281 (33%)
7:00 PM-12:59 AM	--	1,990 (29%)
1:00 AM-6:59 AM	--	955 (14%)

Figure 6. Hourly access of naloxone and other overdose prevention supplies (N = 9,996)



*Includes data from 6 indoor PHVMs; individual-level data were not collected by the 2 outdoor PHVMs.

DISCUSSION

Evaluation data suggest that once PHVMs became established and known in the community, they became a vital source of public health supplies in the communities where they were placed. In addition to overdose prevention supplies, such as naloxone, a variety of other public health supplies were accessed. Over half of users (56%) accessed a PHVM more than once, and demographic data demonstrate that PHVMs reach diverse populations, including many from communities at high risk of overdose. While the outdoor PHVMs did not collect individual-level user demographic data, the easy and consistent access may allow them to reach distinct populations that may be in high need of supplies—highlighted by the after-hours and weekend supply access.

The program is ongoing, and machine numbers and placement have shifted since August 2026. New machines are currently being placed, with the most recent becoming active in late September 2026. Through the ongoing evaluation of the Boston OD2A project, ICH will 1) continue to collect long-term data about all active PHVMs placed in Boston to deepen the understanding of user and usage trends, and 2) conduct a qualitative research project on PHVMs to better assess their impact on communities.

ACKNOWLEDGEMENTS

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