Lessons Learned and Frequently Asked Questions From the Naloxone Vending Machine Learning Collaborative

The Naloxone Vending Machine Learning Collaborative (LC) was facilitated by RTI International in 2023 to bring together local communities that had implemented, or were exploring the implementation of, vending machines for naloxone distribution. Through a series of calls, attended by Comprehensive Opioid, Stimulant, and Substance Use Program (COSSUP) grantees and practitioners from the field, experiences were shared on the implementation and management of naloxone vending machines.

As a novel naloxone distribution strategy with growing popularity in the United States, the LC provided an opportunity for attendees to learn best practices in facilitating the effective deployment of naloxone vending machines, such as identifying appropriate locations for naloxone vending machines, understanding the different types and features of the machines, methods of data collection, and managing operational logistics. Following are the most frequently asked questions and lessons learned provided during the LC series.

Location

Q: What are the common locations for naloxone vending machines?

A: Locations include jails, hospitals (emergency departments and waiting rooms), law enforcement agency lobbies, probation offices, health service and harm reduction organizations, public libraries, rest stops on turnpikes, casinos, day shelters, and convenience stores.

Q: How are locations determined for maximum effectiveness?

A: Considerations for selecting a location included ensuring that the machine is easily accessible to individuals, considering location, time, and access requirements. In identifying a location, partners considered areas known for high rates of opioid-related overdoses and the use of geospatial mapping to support this identification process. Additional considerations included identifying discreet locations to protect the privacy of users in order to increase the likelihood of use. Partners deemed hours for access important, with some

machines placed in lobbies for 24/7 access while others operate during business hours.

Type and Cost

Q: What are the types of machines being used?

A: There are many types of machines being used to distribute naloxone, including:

- Electric vending machines, non-climate-controlled (most common)
- Electric vending machines, climate-controlled (typically more expensive to purchase and maintain)
- Repurposed vending machines
- Repurposed old newspaper boxes (identified as ideal for outside areas)

Q: What is the cost of the machines?

A: The machines vary in cost based on type.

- The typical cost of a vending machine is $5,000, depending on vendor and features.
- The climate-controlled machines can cost up to $15,000.
- The repurposed machines (vending or newspaper boxes) cost less than $2,000.

Supplies

Q: What additional supplies are commonly included in these vending machines?

A: Machines stock:

- Harm reduction supplies (e.g., naloxone, 1-quart sharps containers, fentanyl test strips)
- Medication disposal (e.g., drug disposal pouches)

- Wound care kits
- Personal products (e.g., deodorant, shaving items, pregnancy/HIV test kits, feminine products)

Different supplies, including types of naloxone products, require the machine coils to be sized to appropriately distribute them. Prior to ordering the machine, partners decided which products would be available and shared the product dimensions with the machine vendor for the coils to be sized correctly.

Accessibility

Q: How does an individual access naloxone from vending machines?

A: Providing low-barrier access to naloxone was a key criterion for partners. Machines were set up in different ways to access, with the most common method mirroring the conventional vending route by which users pick an item by row and number. Machines in some communities operated by use of a pin number provided to prospective users.

Q: Is training on how to administer the naloxone required to access it from these machines?

A: State laws differ on whether training is required for naloxone administration by community members. During the planning phase of implementing a machine, partners identified any training requirements by reviewing their state law.[1] For those who did require training because of state-specific laws in place during the time of the LC, partners provided access to a brief training made available by scanning a QR code prior to accessing the machine or by providing educational material at the machine; options were dependent on the law requirements. Subsequent to the establishment of the LC, naloxone is now available over the counter. There has

been research to show that users who were untrained were just as proficient as those with training.[2]

Q: Is it possible to limit the quantity of naloxone that is retrieved per transaction or per person?

A: Programs were able to limit quantity through machine access (location within a building) or by selecting a machine in which the retrieval mechanism limited the quantity dispensed per transaction.

Implementation Challenges

Q: What are common challenges in implementing naloxone vending machines?

A: Stigma about naloxone distribution and providing services to people who use drugs can inhibit the implementation and success of a naloxone vending machine program. Challenges include navigating community norms, adapting to changes in over-the-counter packaging dimensions, navigating state laws on training requirements, and protecting the machines from extreme weather. To overcome barriers, communities have engaged in open conversations with partners who host the machine to ensure buy-in and have maintained consistent communication with partners responsible for ensuring that the machine is stocked. In areas where machines are being underutilized, partners have opted to move them to new locations that will serve the purpose intended.

Q: How are vending machines affected by weather conditions?

A: Naloxone can remain effective for up to 12 months when stored in extreme heat (up to 104°F).[3] Communities concerned about extreme cold have opted to purchase temperature-controlled units or place the machine under a small awning or roof to keep it out of the elements.

Community Buy-In

Q: How has community buy-in been facilitated for naloxone vending machines?

A: Strategies include naming the machines "public health vending machines," collaborating with organizations that serve the population, and using public messaging opportunities to increase awareness of the machine and its benefits.

Data Collection

Q: How are data collected from naloxone vending machines?

A: The methods of data collection from naloxone vending machines include:

- **QR codes:** QR codes are a common method for data collection. This method is efficient and user-friendly, allowing for quick data capture while maintaining user anonymity. For non-electronic machines, QR codes can link people to organizations for follow-up and can also serve as a mechanism indicating machine use.
- **Web applications:** When it comes to ensuring the security of and confidentiality of collected data, some communities employ a secure web application for building and managing online surveys and databases. This tool is especially useful for sensitive data related to health and personal information.

In scenarios where data collected might be shared or used for research or community reports, Institutional Review Board (IRB) approvals may be necessary. This step ensures that all data collection complies with ethical standards, particularly regarding informed consent and the protection of participants' privacy. Communities may need to go through their IRBs to ensure proper consent and ethical handling of data, especially when planning to

share de-identified data for community consumption or research purposes.

Q: What kind of data are collected from naloxone vending machines?

A: The type of data collected from naloxone vending machines can vary depending on the approach and objectives of the community implementing them. However, many programs do not collect any information, opting to create a low-barrier experience. Common types of data collected include:

- **Brief survey responses:** A process in which individuals are asked to complete a short survey, accessed via a QR code, before the machine dispenses naloxone. The survey includes questions on the individual's demographic representation, prior naloxone use, or needs related to naloxone usage.

- **Zip codes:** In cases where communities opt for minimal data collection directly from the vending machines, simple information such as the zip code of the person accessing the naloxone might be gathered. This information can be helpful in outreach strategies within the community, guiding programs to identify zip codes most frequently used. This approach is supplemented with more in-depth data collection during street outreach or in-person distribution initiatives.

- **Additional kit requests and usage logs:** For communities utilizing QR codes, stickers have been placed on naloxone boxes to share information accessing harm reduction, treatment, or other community-based services. This QR code can also serve as a means for individuals to request additional kits and to log whether the naloxone was used, providing valuable data on the utilization and effectiveness of the program.

Operational Management

Q: What is expected related to maintaining and refilling the machine?

A: The maintenance and refilling of naloxone vending machines involve several key responsibilities to ensure that they remain functional and effective in providing lifesaving medication. Local organizations, particularly those focused on harm reduction or public health, frequently take on the responsibility of managing these machines, including purchasing and refilling the machines. These responsibilities typically include:

- **Refilling machines:** Regularly checking and refilling the machines with naloxone kits. This task is typically assigned to designated individuals or groups, often referred to as "stockers." These stockers are responsible for ensuring that the machines are adequately stocked at all times and the kits are within their expiration dates. Many communities have expressed that after the first few weeks of the machine being in place, the frequency of use leveled out, making it easier to identify the needed frequency of resupplying.

- **Overall maintenance:** Apart from refilling and monitoring expiration dates, general upkeep of the machines is necessary. This includes ensuring that the machines are functioning correctly, addressing any technical issues, and maintaining cleanliness and accessibility.

Funding

Q: What are effective ways to secure funding for these projects?

A: Funding can be sourced through local, state, and federal grants; opioid settlement funds; community

fundraising; partnerships with health organizations; and government initiatives focused on public health and harm reduction. The main cost drivers are the machine and the supplies made continually available for access.

Endnotes

1. Legislative Analysis and Public Policy Association. (2022). *Naloxone Access: Summary of State Laws*. Retrieved from https://legislativeanalysis.org/wp-content/uploads/2022/09/Naloxone-Access-Summary-of-State-Laws.pdf.

2. Doe-Simkins, M., Quinn, E., Xuan, Z., Sorensen-Alawad, A., Hackman, H., Ozonoff, A., and Walley, A. Y. (2014). "Overdose Rescues by Trained and Untrained Participants and Change in Opioid Use Among Substance-Using Participants in Overdose Education and Naloxone Distribution Programs: A Retrospective Cohort Study." *BMC Public Health* 14: 297. https://doi.org/10.1186/1471-2458-14-297.

3. Estephan, M., Loner, C., and Acquisto, N. M. (2020). "Effect of Extreme Temperature on Naloxone Nasal Spray Dispensing Device Performance." *Prehospital and Disaster Medicine* 35(3): 272–275. https://doi.org/10.1017/S1049023X20000400.

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