Naloxone Vending Machines:
Considerations for Implementation

Introduction

Across the United States, rates of opioid-related overdose continue to increase at an alarming pace, particularly among Black, Indigenous, and other communities that have been historically disenfranchised (CDC, 2022). The COVID-19 pandemic further exacerbated these disparities, highlighting the need for innovative responses to address these dual crises (Collins, 2020).

The life-saving overdose reversal drug naloxone is an effective, yet underutilized, component of a comprehensive approach to stop overdose deaths (Irvine, 2022). In communities where it is widely available, naloxone has been an effective tool in reducing overdose mortality. Still, securing ready access to naloxone can be challenging, because of barriers such as medical providers being unaware of it and copays preventing people from obtaining it at pharmacies.

One strategy for increasing naloxone availability is through the use of **naloxone vending machines** (NVMs). Similar in design to food and beverage vending machines, NVMs allow individuals to select a desired amount of naloxone and other harm reduction supplies by entering a unique identifying code. NVMs are typically placed in public or semi-public locations and can be programmed to track and limit how much naloxone an individual is obtaining, thus mitigating risk of abuse and allowing for accurate reporting.

NVMs are intended to complement, rather than duplicate, existing points of access such as syringe service programs, pharmacies, and mobile outreach units. Compared to these sites, the advantage of NVMs is that they are anonymous and accessible 24/7. They are also more cost efficient than staffed 24-hour naloxone distribution sites. Finally, over 30 years of research shows high acceptance of NVMs among people who use drugs—the group of people most likely to witness and respond to an overdose.

Implementation Considerations

Important considerations for implementing a NVM include readiness, stakeholder engagement, strategic placement, data collection, promotion, monitoring, and sustainability.

- **Readiness.** Readiness describes the willingness of an organization to support an initiative, both ideologically and financially. Check in with those most likely to benefit from the NVM: partners, funders, law enforcement, and individuals who use drugs. Their buy-in and support will be key to program success. Connect with people who may resist the idea of an NVM, such as residents or businesses operating near potential NVM sites. This will help you understand and address their concerns. Finally, be sure your organization has the funding and staffing capacity to support the purchase, ongoing stocking, and maintenance needed to keep the NVM fully functioning.

- **Stakeholder engagement.** All phases of NVM implementation should be informed by ongoing input from NVM users, including but not limited to people who use drugs, their friends and family, and community partners. These key stakeholders should play a role in deciding where to place machines and types of supplies to stock. They can also help you identify potential barriers to access such as convenience, travel time, or cost.

- **Strategic placement.** Partnering with other organizations will help you determine the most appropriate party to monitor and manage the machine. When determining the location of an NVM, consider neighborhoods that have seen increases in overdose (fatal and nonfatal) or increases in other substance use indicators, such as HIV or Hepatitis C virus.

- **Data collection.** Most medical vending machines have built-in software that tracks use, including frequency of use and the time and date of distribution. These data can inform the program of NVM use patterns and issues. For example, programs may consider moving underutilized machines to more populated areas. Data on frequency of NVM use at certain hours can also help programs address community concerns, such as fear of increased foot traffic or nighttime noise.

- **Promotion.** The adage "if you build it, they will come" may be appropriate for a baseball field in the middle of Iowa, but it's not the most effective approach for building support for, and use of, a new NVM. For NVMs, promotion is critical— through word of mouth, program champions, social media, flyers, local news outlets, or all of the above.

- **Monitoring.** Be sure to monitor the NVM regularly to make sure it is well-stocked and fully functioning. Be responsive to any community complaints and willing to make the necessary adjustments to meet the needs of the community.

- **Sustainability.** To ensure sustainability, both new hire onboarding and the continuing education of existing staff should both include training on the purpose and benefits of NVM. Share the stories of people who use the machines with funders and community partners and provide updates on the measurable impact of NVMs in addressing the overdose crisis. These communications will increase long-term community support for the machine, responsive management of challenges as they arise, and continued referrals for people in need.

NVM Success Stories

Red Project, Grand Rapids, Michigan

The Red Project is a harm reduction program based in Grand Rapids, MI. In 2022, the program installed a vending machine outside their main headquarters. The machine complements Red Project's array of existing services: mobile syringe services, peer recovery services in county jails, post-overdose wellness visits, HIV testing, and fixed-site harm reduction programs in two counties. Anyone can use the machine—there is no required access code or fee for obtaining supplies. The machine's location (right outside Red Projects main office) also makes it easy to stock and maintain and provides protection from inclement weather.

Community members have shown nothing but support for the NVM. Within days of installation, the local news published a story that received numerous positive comments from the public. Expansion to other counties will be informed by data on overdose and HIV incidence, as well as strategic partnerships with organizations already operating in these counties.

> *Everyone was supportive of the vending machines… [They] are a way to extend access beyond the 40 hours/week that we are open.*
>
> *– Steve Alsum, Executive Director, Red Project*

Caracole in Cincinnati, Ohio

> *We surveyed a sample of our 400 registered users. Forty-seven people used the naloxone they got from the machine over 120 times. This averages out to 2–3 overdose responses per user."*
>
> *-- Suzanne Bachmeyer, Program Manager, Caracole*

Caracole is an HIV/AIDS Ryan White services provider offering case management and housing, HIV education, and harm reduction services for people with HIV. At the start of the COVID-19 pandemic in 2020, the organization acted quickly to install a vending machine outside their building to ensure continued access to naloxone.

To use the NVM, users need to first register by calling a phone number posted on the side of the machine. They then receive a user code, which allows Caracole to track frequency of use.

Caracole's strong community partnerships facilitated rapid uptake of the NVM. The agency is also working to champion NVM installation across the state, including in a neighboring rural county. Other expansion plans include incorporating additional harm reduction supplies into the machine, based on the needs of program participants.

Strategic Planning for Naloxone Vending Machines

The following graphic outlines the steps communities can take to explore, implement, and sustain NVM programs. Each phase is described below.

Exploration and Preparation → Implementation → Sustainability

Exploration/Preparation

Readiness: Gather input on a NVM from leadership, staff, and external partners

- Is there internal support for NVMs?
- What is the legality of making available the contents of the NVM in the community?
- How will you pay for the machine and its maintenance, including stocking it regularly and making anticipated repairs?
- Do you have support from external stakeholders, including community associations, law enforcement, etc.?
- How will having an NVM advance racial health equity?
- Will there be any unintended consequences from installing an NVM?

Audience: Use data to determine who will benefit most from the NVM and discuss the concept with them, including:

- Location of NVM (including where access to naloxone is most needed)
- Willingness to use it
- Types of harm reduction supplies the machine can provide (in addition to naloxone)

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Strategic Placement: Decide where to place the machine. Factors to consider include:

- Where overdoses are taking place
- Current options for getting naloxone and existing gaps
- Audience preferences
- Types of information the machine will collect about the people who use it

Maintenance: Determine how to maintain and re-stock the machine.

- Who will check on the machine regularly and ensure that it is stocked?
- How will you obtain user feedback?
- How, and to whom, will people report maintenance issues?
- Will you be able to develop reports on NVM use to address stakeholder concerns and evaluate its placement?

Implementation

Promotion: Let people know it's there and how to use it. Consider:

- How will people know about the NVM and its effectiveness?
- How will you connect with users of the NVM to hear about their experience and any concerns?
- What is the best way to continuously engage the community in which the NVM is placed?

Care: Address issues as they come up and ensure continuous access. Consider:

- How regularly do you have to restock the machine?
- How many people use the machine each day/week/month?
- How frequently do users encounter technical issues?
- How quickly do you respond to complaints?
- Is the NVM producing any unintended consequences that need to be addressed (e.g., an increase in trash)?

Evaluation: Determine and make necessary changes

- Are you measuring how much naloxone is getting out into the community as a result of the NVM?
- How has the NVM enhanced access to naloxone in the community?
- Do you need to relocate the NVM?

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Sustainability

Data collection: Analyze data to ensure fidelity and evaluate the machine and its use. Consider:

- What are you learning about how people are using the machine?
- Would a survey of NVM users help answer additional questions without creating more barriers at the point of use?
- Is the machine being restocked appropriately?
- Are staff responsive to community or user concerns?

Leadership: Embed hard reduction approach in organizational culture, priorities, and goals. Consider:

- How have attitudes toward the vending machine or harm reduction evolved since the NVM's launch?
- Is training on harm reduction needed for any staff members?
- Is the NVM embedded in the culture of the organization (i.e., is it a normal and accepted part of service delivery? Do staff feel comfortable talking about it with others? Is the organization is proud of its work?
- Is harm reduction and greater access to overdose reduction supports part of the organization's goals?

Partnerships: Cultivate supportive partnerships that provide meaningful perspectives on success and challenges to naloxone access. Consider:

- Are other organizations referring people to the NVMs?
- Are there strategic partnerships that the agency should cultivate to inform placement of future NVMs?
- Have you identified an academic partner to further evaluate the machine?
- Are you engaging partners on overdose prevention and naloxone access broadly, and making sure the NVM continues to be relevant and important?

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