



Appalachian/Midwest Regional Judicial Opioid Initiative

NALOXONE Vending Machine Implementation Report



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Introduction to the Regional Judicial Opioid Initiative

In 2016, judges and court stakeholders convened a multi-state summit to discuss strategies the court system could employ to address the rising rates of fatal and nonfatal opioid-related overdoses. This initial work became formalized as the Regional Judicial Opioid Initiative (RJOI) with funding from the Comprehensive Opioid, Stimulant, and Substance Abuse Program (COSSAP)—originally Comprehensive Opioid Abuse Program (COAP)—through the Bureau of Justice Assistance. Kristina Bryant, National Center for State Courts (NCSC) served as project director and Dr. Brad Ray and his lab served as the “action researcher” who provided academic detailing around developing aspects of the overdose epidemic, oversaw data integration and dashboard development, and evaluated the pilot programs that would come from the RJOI’s work.

The RJOI includes judicial leaders and court stakeholders from Illinois, Indiana, Kentucky, Michigan, North Carolina, Ohio, Tennessee, and West Virginia and has striven to have an impact over the past six years. Using a data-driven approach, the RJOI worked to standardize information across participating states and transform data into action by identifying interstate

areas of concern and leveraging existing networks across state boundaries to pilot programs that not only address substance use disorder treatment but also overdose prevention. This regional judicial approach was later replicated across the New England states in 2019.

This report details the final COSSAP activity of the Appalachian/Midwest RJOI which is a novel harm reduction activity aimed at addressing overdose among justice-involved populations: the implementation of naloxone distribution vending machines in county jail facilities. The report begins with a review of scientific research demonstrating the need for naloxone among justice-involved populations, then outlines the development of an implementation strategy for vending machines that would distribute free naloxone in county jail, correctional, and harm reduction facilities across the eight RJOI states. The barriers and facilitators to implementation are described as part of the formative evaluation strategy, while analysis of administrative data on naloxone distribution are presented for effectiveness. This information is presented in the form of responses to the questions that have arisen in this effort to distribute naloxone.

QUICK FACTS ABOUT NALOXONE



Naloxone is safe for anyone to use when encountering an individual experiencing an overdose. It works by knocking opioids off the receptors in the brain and replacing them with naloxone which stops opioids from reattaching. Sometimes it can take multiple doses to reverse an overdose, depending on the level of opioids present in the individual; however, there is no opioid that cannot be reversed by administering enough naloxone. Adverse effects are extremely rare, and naloxone will have no effect if opioids were not used. Individuals cannot become “immune” to naloxone, it does not make people violent, and it cannot be “abused.” Naloxone should be stored at room temperature and not exposed to direct sunlight; however, expired naloxone can be just as effective or up to 10 years and should not be thrown away. Agencies that distribute naloxone should remain aware of shortages and triage distribution to those at highest risk of overdose.

Why do people overdose after they are released from incarceration?

Overdose deaths continue to rise in the United States with more than 100,000 deaths reported from 2021 to 2022.¹ Most of the overdose deaths were driven by illicitly produced fentanyl, a synthetic opioid that is more potent than heroin or morphine. Fentanyl has contaminated much of the illicit drug supply, heroin in particular, but has also been detected, albeit much more rarely, in methamphetamines and cocaine.²⁻⁸ Thus, while the use of illicitly produced stimulants has increased dramatically between 2015 and 2020, it is still fentanyl, an opioid, that is driving overdose deaths nationally.

Overdose is the leading cause of death among persons who are returning from incarceration.⁹⁻¹² Those who have not been inducted into evidence-based medication while exiting incarceration are at high risk of fatal overdose; estimates suggest that more than one in five overdose deaths in a county are persons who were recently released from incarceration. This occurs because opioid users rapidly lose tolerance after they go through

painful withdrawal while incarcerated; then, especially without any effective medication for opioid use disorder, if the person relapses using substances in a highly erratic drug market, they are likely to have a fatal overdose.^{13,14}

In the case of an opioid overdose, including those caused by fentanyl and even when combined with other substances, naloxone can work to reverse the respiratory effects brought on by the opioid. Naloxone can be administered intravenously, intramuscularly, subcutaneously, or intranasally, and displaces and blocks opioid agonists from receptor sites, effectively reversing an opioid overdose.¹⁵ Its effectiveness has been well established¹⁶ with few adverse events,¹⁷ and as a result, there are growing efforts to distribute naloxone in community settings.^{18,19} Local jails serve as an initial point of contact as individuals enter the criminal-legal system, and offer a unique opportunity for overdose prevention.^{20,21}

How do we implement vending machines in jail facilities?

There are extensive efforts underway in many jails to implement medications for opioid use disorder (e.g., buprenorphine, methadone, and naltrexone).²²⁻²⁴ However, many of those screened for a potential opioid use disorder cycle through the jail within a matter of hours or days with little opportunity for in-jail medical staff to assess and induce medications.²² Therefore, to expand efforts to better encompass overdose prevention, jail facilities can also provide naloxone.^{25,26}

Numerous jails already provide naloxone to released detainees, though often in restrictive and cumbersome ways. For example, naloxone may be provided to persons who receive medication in the facility or who screen positive for a disorder, while other facilities put naloxone kits in the property room boxes for detainees as they leave the facility to achieve wider provision of naloxone in the community. These efforts put the responsibility on correctional staff or in-jail medical providers to

dispense naloxone. Moreover, many naloxone distribution programs require participants to attend an opioid-overdose educational session and training, which can serve as a barrier, especially in light of research which suggests there is no significant difference in the ability to successfully reverse an opioid overdose via naloxone among those who have received naloxone training and those who have not.²⁷

To remove potential stigma associated with obtaining this life-saving medication, the Los Angeles County Jail implemented the first vending machine to distribute naloxone in the U.S. in June 2019. The vending machine provides overdose prevention and response video training for every individual who is released, in addition to access to free naloxone. During the first nine months of 2020, more than 20,000 doses of naloxone were distributed through this free self-serve vending machine.^{28,29}

In 2021, Dr. Ray worked with Shaffer Distributing to customize vending machines to distribute free naloxone. This customization included removing the payment mechanism and altering the machine coils to distribute the standard two-kit intranasal naloxone kits (see Exhibit 1).



Exhibit 1: Naloxone vending machine and box containing two nasal spray kits

The vending machines hold 300 naloxone “kits” or 150 boxes containing two atomizers for intranasal administration.

Dr. Ray initially implemented these machines in Michigan with funding from the state’s CDC Overdose Data to Action grant, then worked with Overdose Lifeline, a nonprofit organization in Indiana to use the State Opioid Response funding from SAMHSA. Through this work, Dr. Ray implemented 15 machines in Michigan and 20 in Indiana. Six and 10 of the vending machines went into county jail facilities, respectively.

As part of its funding from COSSAP, the NCSC contracted with Tara Blair to implement 20 of the modified vending machines across the eight RJOI states. Blair’s implementation approach was initially focused on the local level, attempting to contact local jail authorities and targeting specific interstate overdose hotspots with the highest overdose rates. This approach yielded no opportunities for implementation, so efforts shifted to statewide agencies who were focused on providing harm reduction services and, as described later below, also evolved to include implementation at locations that interacted with the jail population. Placement of vending machines in the RJOI states is still in progress, but planned implementation is detailed in Exhibit 2.

State	IL	IN	KY	MI	NC	OH	TN	WV
Machines	4	1	6	2	5	2	0	0
Counties	Winnebago (4 locations)	Fayette	Carroll Knox Leslie Boyd Franklin Madison	Oakland (Pontiac and Troy)	Cumberland Buncombe Wilkes Forsyth Surry	Montgomery Lucas	–	–
Setting	Jail	Harm Reduction	Jail	Community Corrections	Jail	Jail	–	–

* Counties that have requested more than one machine. If any counties are unable to implement these, counties will receive the amount noted in parenthesis instead of a single unit.

Exhibit 2: Implementation Outcomes by RJOI State

What are the barriers and facilitators to implementation?

To understand the barriers to and facilitators of the naloxone distribution efforts, Dr. Ray conducted semi structured interviews with all early adopters (Michigan and Indiana) and a grounded thematic analysis of Blair’s implementation notes. Several factors were identified as facilitating the implementation of vending machines in county jail settings.

Facilitators. Jails that had implemented opioid use disorder medications had a much better understanding of naloxone safety and the need for this medication in addressing overdose. As a result, many of these jails were already distributing naloxone to detainees and the vending machine offered a more efficient and less stigmatizing means of doing this. Ties between treatment or harm reduction providers also helped reduce misconceptions about the liability of naloxone distribution.

A second facilitator emerged in Blair’s attempt to implement the naloxone vending machines through states rather than local agencies. By working across multiple jurisdictions, these agencies were able to identify jail facilities where administration would be more favorable toward naloxone distribution. However, in other instances, the state agencies sometimes served as gatekeepers to RJOI’s efforts if they were engaged in similar work. For example, in Michigan and Indiana, vending machines had already been purchased by other agencies working with jail facilities who had not yet placed all their machines, and the agencies were hesitant to share viable contacts with Blair. To address this, locations other than jails were approved for vending machines which included pretrial services agencies, community corrections sites, and community harm reduction agencies that partner with jails.

A final facilitator was the local media who reported on the naloxone vending machine installations throughout the states (see Exhibit 3).



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Exhibit 3: Implementation Facilitator Example from Early Adopter

Barriers. At the local level, the primary barriers resulted from stigma stemming from misconceptions about naloxone and persons who use drugs.

For example, one Indiana Sherriff who sought approval from the county board resulted in a commissioner putting his opposition to providing naloxone on the record, suggesting that it “enabled” drug use at release. A second board meeting included members from the health department but resulted in the same commissioner stating that, “we should not be giving drug offenders a pass on their next overdose” and resulted in a no-vote from the county board.

At the state level, legal barriers around naloxone distribution provided barriers. For example, a Tennessee justice committee stated that current polices would “not permit the use of a vending machine” to distribute naloxone and cited pending legislation to Blair. Similarly, West Virginia reported that because the full name and date of birth are required for anyone who received naloxone, the vending machine approach would not be viable.

The most salient barrier that emerged as a legitimate concern was sustaining the supply of naloxone in the machine. This issue included

identifying the appropriate local partners to monitor and restock the vending machine, how costs for the naloxone would be addressed, and thinking about national shortages in the availability of naloxone. Additionally, major delays

resulted from the supply-chain shortages caused by the COVID-19 pandemic. The remoteness of certain facilities was also noted as a barrier among some sites that had implemented the vending machines.

Is distributing naloxone through vending machines effective?

Correctional staff reported an overwhelmingly positive experience when reflecting on the vending machines in semi structured interviews with Dr. Ray, while several in-jail health providers indicated they wanted to provide more resources in addition to using the naloxone vending machines (e.g., syringes, fentanyl testing strips, and other safety supplies). Staff also stated that removing the barriers of attending an in-person training before accessing naloxone reduced stigma and burden on distribution. These responses from early adopters suggest a measure of implementation success, but this does not address whether providing naloxone through a vending machine improved overall distribution efforts. To determine implementation effectiveness, Dr. Ray developed a methodology to examine naloxone distribution

before and after vending machine implementation in the six jail facilities in Michigan from his earlier work through the Overdose Data to Action grant.

Each of the machines were situated within the jail facility, so both detainees being released and the general public could access the naloxone. The Michigan Department of Health and Human Services developed an online portal for agencies and individuals to order naloxone free across the state (see Exhibit 4). To reduce the data collection burden on agencies implementing the machines, Dr. Ray relied on administrative data from the online portal to see whether the agencies responsible for stocking the machines increased their naloxone orders after implementation of the vending machines.

MDHHS Naloxone Request Form

If the Submit Form button does not work, please email the request form to MDHHS-NaloxneRqst@michigan.gov to ensure the form is received. **Submit Form**

Naloxone distributed through this portal by the State of Michigan is meant to provide additional naloxone capacity, beyond existing efforts through the state, the Prepaid Inpatient Health Plans, community organizations, non-profit organizations, and other channels.

By checking this box, I affirm that my organization will maintain any existing effort, including financial resources, devoted to naloxone distribution after receiving these doses. These doses will be additional resources and will not substitute for or displace existing resources provided by my organization. I affirm that MDHHS and any outside entities funding the purchase of the naloxone, shall not be liable for any claims related to or arising from the distribution or use of the naloxone provided by MDHHS according to this agreement. **I affirm:**

1. Please provide the following information:

Organization Name:

Contact Person Name:

Phone Number:

Email Address:

Address Line 1 (for FedEx delivery):

Address Line 2:

City, State, Zip:

Exhibit 4: Michigan Naloxone Portal

As illustrated in Exhibit 5, the average number of naloxone kits increased among five of the six jail facilities six months after implementation and the total number of kits increased in five facilities. Increases were more pronounced among the larger jail facilities (200+ beds), while the second smallest (Escanaba) and most rural (Manistee)

facilities did not show an increase at the six-month follow-up. Additionally, one of the facilities, Jackson County, had not provided naloxone before the vending machine implementation. It is estimated that within six months, the Jackson County jail facility distributed at least two kits for each bed.

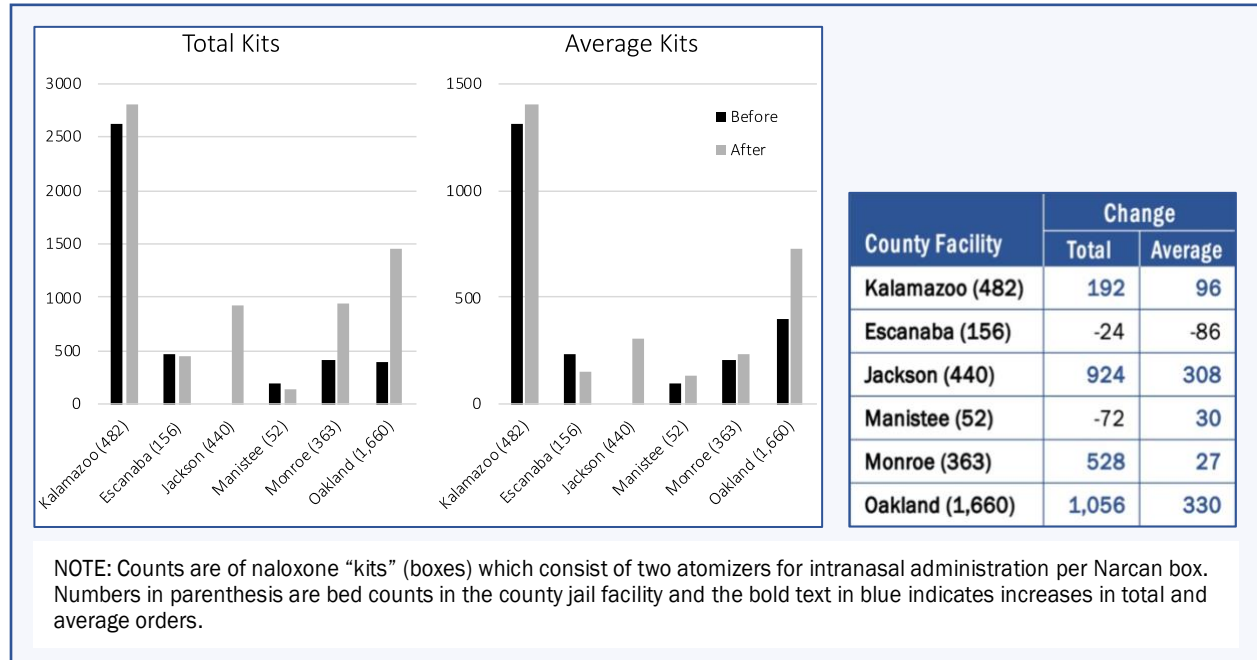


Exhibit 5: Naloxone Orders by Jail Stocking Agency Six Months Before and After Vending Machine Implementation

Conclusions from the Vending Machine Implementation Efforts

From data collection practices on opioid prescribing, to expanding knowledge about opioid use disorder across criminal legal systems, to expanding treatment through virtual services, the Appalachian/Midwest RJOI has evolved through the waves of the overdose crisis. In this last endeavor through their COSSAP funding, the RJOI has pushed the envelope on harm reduction practices for justice-involved populations by implementing vending machines across the region that provide free naloxone.

These machines are still in the process of being implemented, and while the outcomes at the community-level cannot be assessed, this report details the need for naloxone in these settings, along with the facilitators and barriers

experienced through the implementation process. While the implementation approach was not aimed at calculating an acceptance rate, Blair noted that she would sometimes reach out to 10 county jails in a state to find only one that was interested in implementing a free vending machine. Blair modified her approach to identify the key harm reduction practitioners working with statewide jails who provided insight on where implementation would be more feasible. Apathy was not the only barrier, Blair revealed active barriers against naloxone distribution to justice-involved populations both in the form of discriminatory remarks by publicly-elected officials and purported legal changes.

While it is beyond the scope of this report and Dr. Ray's expertise to assess the merit of the legal challenges to naloxone distribution through vending machines in each of the RJOI states, it is worth noting that in all of these states, a person can order free naloxone through NextDistro.com and have it delivered to their home. Thus, if there are local or state legal codes that present a challenge to these national efforts (which only provide naloxone to those with the privilege of internet and a secure mailing address), the focus should be on immediately altering those laws to expand naloxone distribution, as this country is in an epidemic with an overdose death occurring every five minutes. State and local governments should improve their naloxone laws to reflect the scientific evidence on the effectiveness and safety of this product, while federal efforts should focus on regulating naloxone as an over-the-counter medication.

As the overdose crisis continues, communities are going to have to look for opportunities to distribute naloxone to citizens at the highest risk of overdose and this will often be justice-involved persons. There will not always be a clear policy or legal path forward with emerging overdose prevention activities like vending machine implementation and it will often require peer connections across early adopters. The vending machine implementation efforts revealed the utility of public media as sheriffs and other criminal-legal representatives who are elected officials sometimes welcomed the opportunity to highlight innovative efforts in their communities; thus, as more jail facilities implemented the machines, more positive news articles were published providing supportive examples to those contemplating this distribution approach. However, it is important to remember that jail facilities are not designed for treatment, thus, local criminal-legal systems should also work to reduce the incarceration of persons who use drugs by diverting, deflecting, and decriminalization in ways that are calibrated with local drug and public safety policies.



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Research suggests that the provision of naloxone in the community can reduce fatal overdose rates in that jurisdiction.³⁰ Thus, as machines are implemented and kits are distributed over the next several months, Dr. Ray will follow up to empirically examine the RJOI's impact through this final COSSAP activity and ideally add to this literature on the long-term effectiveness of the naloxone distribution efforts.

As detailed in this report, the final work of the RJOI aimed to strike at the heart of the current overdose crisis and it was found that vending machines provide a viable means of naloxone distribution for persons who are leaving incarceration, especially those in larger jail facilities of more than 200 beds. The machines reduce the responsibility of naloxone distribution on correctional staff and further remove the stigma for those interested in accessing this life-saving medication.

Endnotes

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