

Improving Partnerships Between Public Health and Public Safety to Reduce Overdose Deaths: An Inventory From the CDC Overdose Data to Action Funding Initiative

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ABSTRACT

Rates of drug overdose deaths are high and growing. Innovative strategies, such as partnerships between public health and public safety (PH/PS) agencies, are needed to curb these trends. Support for PH/PS partnerships as an overdose prevention strategy is growing; however, little information exists on the makeup of activities within this strategy. The US Centers for Disease Control and Prevention's (CDC's) Overdose Data to Action (OD2A) cooperative agreement supports innovative and comprehensive overdose surveillance and prevention activities across the United States. Within OD2A, funded states, counties/cities, and territories may implement PH/PS partnerships to reduce overdose deaths. An inventory of PH/PS activities described in OD2A recipients' year 2 annual progress reports was conducted. These activities were abstracted for PH/PS partners' roles, intended audience, deliverables, objectives, stage of overdose risk addressed, and type of strategy implemented. The inventory revealed that 49 of the 66 funded jurisdictions planned 109 PH/PS activities. Most aimed to bridge knowledge, data, and service gaps and intervened at higher levels of overdose risk. This analysis highlights opportunities to adapt and expand cross-sector overdose prevention efforts across the overdose risk continuum.

KEY WORDS: health departments, overdose, public health, public safety

In 2021, more than 107 000 drug overdose deaths were recorded in a 12-month period for the first time in the United States, signaling the need for new and innovative strategies to prevent overdose deaths.¹ Substance use is a societal issue that sits

squarely at the intersection of public health (PH) and public safety (PS).² Therefore, multisector partnerships that include PH/PS agencies are one such strategy. PS agencies include law enforcement, first responders including fire and emergency medical services, and the criminal justice system.³

PS team members frequently engage with people who have experienced an overdose or are at risk of overdose. These interactions occur in the community, for example, when first responders are called to the scene of an overdose, when postoverdose outreach teams offer linkages to care or harm-reduction materials, or when law enforcement engages with an individual at the point of drug distribution. In 2019, more than 140 000 responses by emergency medical services were opioid-related and more than 1.5 million arrests by law enforcement were for drug offenses.^{4,5} Interactions also occur before, during, and after incarceration, as nearly 60% of state prisoners meet the criteria for drug dependence or abuse.⁶ Importantly, overdose is a leading cause of death among formerly incarcerated individuals.⁷ Through these multiple touch points, PS agencies are well poised to play a large and critically important role in curbing the ongoing overdose crisis. In addition,

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PH/PS partnerships can catalyze progress toward reducing drug overdoses, as both sectors work together toward mutual goals of achieving safety and security for populations.⁸

Park and colleagues⁹ outline a Continuum of Overdose Risk (COR) framework to highlight stages of risk and strategies to de-escalate progression toward higher stages of risk. This framework addresses stages of overdose risk across a continuum by intervening with de-escalation strategies that can be implemented at multiple stages. Approaches that consider each stage of risk and each de-escalation strategy are necessary to curb the current overdose epidemic. The COR framework posits that risk of overdose increases with each stage along the continuum, keeping in mind that a person can skip stages and that overdose can occur at any stage, even drug initiation, given the harmful impact of fentanyl. The stages of overdose

risk begin at drug initiation and then active drug use, which also occurs along a spectrum from recreational drug use for pleasure to persistent drug use that can be defined as a mild or moderate substance use disorder (SUD).¹⁰ As active drug use varies widely, so does the risk of overdose for people within this stage. The next stage is addiction, characterized by chronic and compulsive drug use.¹⁰ The fourth and fifth stages are nonfatal and fatal overdose, respectively. The COR framework organizes overdose prevention interventions into 6 strategies, called de-escalation strategies, as they decrease risk of overdose and the possibility of escalating from one stage of risk to the next. These de-escalation strategies are partnerships with people who use drugs (PWUD), prevention, harm reduction, treatment, recovery, and reversal of criminalization of PWUD, and examples of types of activities included in each strategy are provided in Table 1.

TABLE 1
Deductive Categories and Codes Applied to PH/PS Activities Within OD2A

Deductive Category	Code	Additional Information on Inclusion Criteria
CDC objectives for PH/PS activities	Bridge knowledge, data, and service gaps that impact the success of community-wide overdose prevention efforts	Focus on creating data, improving data availability, disseminating information, improving knowledge, and identifying gaps in services
	Enhance programs and policies to support the needs of those at risk of overdose	Focus on development and implementation of programs and policies
Stage of overdose risk	Drug initiation	Intervening with people before the initiation of drug use
	Active drug use	Intervening with people actively using drugs
	Addiction	Intervening with people who experience an SUD
	Nonfatal overdose	Intervening with people at risk of experiencing a nonfatal overdose
	Fatal overdose	Intervening with people who have experienced a nonfatal overdose
De-escalation strategy	Meaningful partnerships with people who use drugs	Drawing on the expertise of PWUD in the design and implementation of programs, policies, and laws
	Prevention	Preventing drug initiation, progression to riskier forms of drug use (eg, smoking to injection), and overdose, upstream factors related to overdose risk (eg, social determinants of health, stigma, trauma). Risks can be addressed through various channels (eg, training, mass media)
	Harm reduction	Reducing harms associated with drug use (eg, OEND drug checking, training providers on trauma)
	Treatment	Providing treatment of SUD (eg, MOUD) or supporting uptake of treatment (eg, referrals to MOUD, reducing stigma related to MOUD)
	Recovery	Does not mean abstinence; supporting a process of change through which people improve their health and wellness, live self-directed lives, and strive to reach their full potential; treating SUD as chronic condition
	Reversal of criminalization of PWUD ^a	Supporting off-ramps from the criminal justice system to care and support, such as diversion, decarceration, and reformation to community supervision

Abbreviations: CDC, Centers for Disease Control and Prevention; MOUD, medications for opioid use disorder; OD2A, Overdose Data to Action; OEND, overdose education and naloxone distribution; PH, public health; PS, public safety; PWUD, people who use drugs; SUD, substance use disorder.

^aAs demonstrated by the description of reversal of criminalization of PWUD, this strategy refers to movement toward removing penalties for drug use and possession, for example, and diversion of PWUD away from the criminal justice system to improve safety and support.

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Activities stemming from PH/PS partnerships can occur across the COR framework. For example, at the earlier stages of risk, drug initiation and active drug use, a prevention strategy could be employed, such as The Martinsburg Initiative, which is a partnership between law enforcement, schools, health, and education to address early risks. Specifically, law enforcement and educators are trained to use a trauma-informed approach in classrooms to identify and offer appropriate intervention through collaborating with PH and community organizations.¹¹ On the later stages of the continuum, a PH/PS activity targeting fatal overdose, the highest stage of risk, could implement harm-reduction and treatment strategies. For examples, a postoverdose outreach program could pair first responders with behavioral health professionals or peer supporters to provide naloxone and linkage to treatment of SUD and other needed services for people who experienced a nonfatal overdose.¹²

Federal agencies such as the Department of Justice, Office of National Drug Control Policy (ONDCP), and Centers for Disease Control and Prevention (CDC) are tasked with employing various approaches to address the overdose epidemic, including advancing PH/PS partnerships to reduce overdose deaths.¹³ CDC recognizes the importance of PH/PS partnerships as reflected in its strategic planning, its partnership with ONDCP to implement the Overdose Response Strategy, and its substantial investment through the Overdose Data to Action (OD2A) cooperative agreement.¹⁴⁻¹⁶

CDC defines 2 objectives for PH/PS partnerships: (1) enhance programs and policies to support the needs of those at risk of overdose and (2) bridge knowledge, data, and service gaps that impact the success of community-wide overdose prevention efforts.¹⁷ Within CDC's Overdose Framework, one strategic priority is partnering with PS and community organizations at the national, state, and local levels to strengthen efforts to reduce overdoses.

CDC highlights the value and potential impact of PH/PS through investment in the OD2A cooperative agreement (CDC-RFA-CE19-1904). OD2A supports a multisector and comprehensive approach to overdose surveillance and prevention activities in funded jurisdictions across the United States.¹⁵ Three surveillance strategies and 7 prevention strategies (3 of which are optional) make up the core components of this \$1.2 billion, 4-year cooperative agreement starting 2019. One of the optional prevention strategies focuses on improving partnerships with PS and first responders.

Comprehensive descriptions of overdose programs at the state and local levels are needed to inform

prevention and response activities in other jurisdictions.¹⁸ Given the recent emphasis by federal agencies on PH/PS partnerships, there is a need to describe and appraise currently implemented activities. Such a synthesis will provide examples of activities that can be adapted, identify gaps in implementation plans, and assist in development of evaluation plans to advance the science. The objective of this analysis was to inventory OD2A-funded PH/PS activities by identifying recipients, describing the activities, and categorizing them by the CDC objective, as well as stage of intervention and de-escalation strategy along the COR framework.^{9,14,16}

Methods

OD2A funds a total of 66 jurisdictional health departments (48 states, 15 counties/cities, and 3 districts/territories), henceforth referred to as recipients. OD2A recipients submit annual progress reports (APRs) to CDC that capture descriptions of and progress updates for each activity. We reviewed year 2 APRs, the most recently available reports at the time of analysis, which were submitted by recipients in May 2021, and describe activities that were implemented from September 2019 to August 2021.

We extracted all the information on PH/PS activities and compiled them into a Microsoft Excel database, which formed the basis of our inventory. On the basis of the information provided by recipients, we summarized the activity description and identified the agency or agencies leading the activity implementation (ie, whether they were PH and/or PS agencies), the intended audience of the activity, and the deliverables (either achieved or proposed), where this information was provided. Where activities were listed but descriptions were missing, the activity was not included in this analysis. After reviewing all the types of intended audiences for the activities, the following codes were identified and operationalized: general public (including schools); health agencies and providers (ie, health departments, peer recovery coaches, PH nurses); PS agencies (ie, first responders including emergency medical services, law enforcement); and people at an increased risk of overdose (ie, criminal justice involved populations, PWUD, and people who have experienced a nonfatal overdose).

After extracting information from the APRs, deductive coding was conducted for each activity for the following: CDC objective for PH/PS activities; the stage of overdose risk that the activity targets; and the de-escalation strategy that the activity employs, based on the COR framework.⁹ Categories and corresponding codes are described in Table 1. If an activity targeted multiple stages of risk or employed more

than 1 de-escalation strategy, the earlier level or stage was selected. For example, if an activity targeted addiction and fatal overdose by linking to treatment of opioid use disorder (OUD) and providing naloxone, addiction and harm reduction were indicated for the stage and strategy, respectively. This is because as a stage of overdose risk, addiction occurs earlier than fatal overdose, and as a de-escalation strategy, harm reduction intervenes earlier than treatment. Subsequently, all codes within each deductive category were mutually exclusive, meaning that only one option could be selected for each activity. Finally, unknown was coded for any category for which not enough information was provided to select another code.

Results

A total of 49 (38 states, 11 counties/cities) of the 66 jurisdictions funded by OD2A are implementing at least one PH/PS activity. Jurisdictions report implementing as many as 5 discrete PH/PS activities for a total of 109 activities identified among the 49, after removing 3 activities that lacked sufficient information. The full inventory, including the activity description, of these 109 activities is provided in Supplemental Digital Content 1 (available at <http://links.lww.com/JPHMP/B60>). Of the 109 PH/PS activities in OD2A, nearly 81% ($n = 89$) focused on achieving the CDC objective for PH/PS partnerships of bridging knowledge, data, and service gaps while 18% ($n = 20$) activities addressed the other objective of enhancing programs and policies to support the needs of those at overdose risk (Table 2).

CDC objective 1: Bridging knowledge, data, and service gaps

Partner roles, intended audience, and deliverables

For three-fourths ($n = 67$) of the 89 activities within this objective, the description made it clear that a PH agency was leading the implementation of the activity. PS partners have a variety of roles in these activities, such as providing data for or input on the activity, participating in tandem with other agencies, and receiving training. For 7 activities, no role for PS agencies was described. The intended audience for most activities ($n = 79$) is PH and/or PS agencies, while the others are intended for health providers ($n = 6$), people at an increased risk of overdose ($n = 2$), and the general population ($n = 2$).

Expected deliverables also vary across activities. Improved partnerships, demonstrated by engagement of agencies, data sharing agreements, a finalized

assessment, or development of a plan or protocol, are described deliverables for 18 activities. Aligning with the objective of bridging knowledge and data gaps, 37 activities produce improved information sharing through the development and dissemination of data platforms, dashboards, and reports while 29 activities planned to train people or produce training materials. Finally, 5 activities achieve the objective of bridging service gaps by delivering improved naloxone dissemination.

Stage of overdose risk and de-escalation strategy

In terms of the stage of overdose risk addressed, 4 activities focus on drug use initiation, 16 on active drug use, 3 on addiction, 46 on nonfatal overdose, and 16 on fatal overdose. Most activities implement de-escalation strategies earlier in the COR framework as 49 implement prevention strategies through improved multisector collaboration, data sharing, and data use, for example. In addition, 30 activities implement harm-reduction strategies including direct provision of overdose education and naloxone distribution (OEND) and training PS agencies on harm reduction. Later in the continuum, 3 activities implement treatment by working with PS partners to reduce barriers to medications for opioid use disorder (MOUD), 2 implement recovery by planning for patient support following a pain clinic closure, and 1 implements reversal of criminalization by evaluating a diversion program. The de-escalation strategy and stage of overdose risk were undetermined for 4 activities.

CDC objective 2: Enhance programs and policies

Partner roles, intended audience, and deliverables

Half ($n = 10$) of the 20 activities within this objective show that a PH agency is leading, most ($n = 19$) indicate that PS agencies participate in program implementation, and one fails to describe a role for PS. Most activities ($n = 16$) are intended for people at an increased risk of overdose, while 2 are for the general population and 2 directly serve PH and/or PS agencies. Deliverables for these activities consist of improving the number of individuals reached by programs that offer linkage to care, including MOUD ($n = 10$) and/or OEND ($n = 2$), through postoverdose outreach or diversion ($n = 10$), and with trauma-informed care approach ($n = 1$). The sum of these numbers exceeds 20 as 3 activities improve coverage of more than 1 program (not shown in Table 2).

TABLE 2**PH/PS Activities in OD2A Year 2 Annual Progress Reports, Abstraction Categories by CDC Objective for PH/PS Partnerships (N = 109)**

Abstraction Category	Total, N	Bridging Knowledge, Data, and Service Gaps, n	Enhancing Programs and Policies, n
Total		89	20
Agency roles			
PH leading	75	65	10
No PS role described	8	7	1
Intended audience			
PH and/or PS agencies	80	79	2
Health providers	6	6	0
People at an increased risk of OD	19	2	16
General population	4	2	2
Deliverable			
Improved partnerships	17	18	0
Improved information sharing	37	37	0
Train people	29	29	0
Improve program coverage ^a	26	5	20
Stage of OD risk			
Drug initiation	5	4	1
Active drug use	25	16	9
Addiction	6	3	3
Nonfatal OD	50	46	5
Fatal OD	19	16	2
Unknown	4	4	0
De-escalation strategy			
Meaningful partnerships with PWUD	0	0	0
Prevention	50	49	1
Harm reduction	37	30	7
Treatment	8	3	5
Recovery	2	2	0
Reversal of criminalization of PWUD	8	1	7
Unknown	4	4	0

Abbreviations: CDC, Centers for Disease Control and Prevention; OD, overdose; OD2A, Overdose Data to Action; PH, public health; PS, public safety; PWUD, people who use drugs.

^aPrograms include naloxone distribution, linkage to care, post-OD outreach, diversion, and trauma-informed care.

Stage of overdose risk and de-escalation strategy

In terms of the state of overdose risk addressed, 1 activity focuses on drug use initiation, 9 on active drug use, 3 on addiction, 4 on nonfatal overdose, and 3 on fatal overdose. Eight activities implement de-escalation strategies in the earlier part of COR: 1 activity implements prevention through a school-based program, and 7 implement harm reduction through expansion of OEND by PS partners and in justice settings. Five activities offer treatment by linking to MOUD or providing it in criminal justice

settings, and 7 offer reversal of criminalization by scaling up diversion programs.

Discussion

This article documents strategies and activities implemented within a federally funded initiative to improve PH/PS partnerships to reduce deaths from drug overdose and is the first to provide an inventory of these activities. PH/PS partnerships are an innovative strategy in an overdose prevention and response effort and are highlighted in the 2022 National Drug Control

Strategy.¹³ However, cross-sectoral approaches are often poorly recognized and understood.² Given the nascency of this strategy, the documentation provided in this article improves our understanding of activities included under this strategy and where they intervene along the overdose risk framework to inform PH/PS partnerships in the future.

Support for PH/PS partnerships as an overdose prevention strategy is demonstrated by commitment across federal agencies.¹⁹ In this analysis, we found that nearly three-fourths of jurisdictions receiving funds for OD2A are implementing PH/PS activities, despite being an optional strategy within their OD2A work plans. This finding demonstrates pervasive employment of this strategy not only at the federal level but also in states and locally.

Of the 109 activities inventoried, we found 89 activities aligned with the CDC objective of bridging gaps, far more than the 20 activities that align with the objective of enhancing programs and policies. This again speaks to the nascency of efforts within this strategy, as PH/PS partnerships often begin with cross-sector planning, education, and knowledge sharing. In fact, Public Health and Safety Teams (PHAST) toolkit has been developed to guide the development and maintenance of PH/PS partnership in localities, which begins with increasing their shared understanding of the local overdose crisis.³ One guiding principle of this model is that an explicit, common goal of reducing overdose deaths is key to initiating and maintaining PH/PS partnerships. Accordingly, most activities falling under the objective of bridging gaps are focused on the latter stages of overdose risk by intervening with those at risk of or who have experienced a nonfatal overdose.

We used a framework presented by Park and colleagues⁹ to abstract and categorize PH/PS activities that presents continuums for both overdose risk and de-escalation of risk strategies. It is important to note that the Park and colleagues continuum aligns with strategies presented in the US Department of Health and Human Services' Overdose Prevention Strategy, highlighting prevention, harm reduction, evidence-based treatment, and recovery as key overdose prevention strategies.²⁰ The framework presented by Park and colleagues⁹ adds meaningful partnerships with PWUD and reversal of criminalization of drug use as de-escalation strategies.⁹ While 8 of the PH/PS activities inventoried described reversal of criminalization of drug use through diversion, none described meaningful partnerships with PWUD. This is problematic, as inclusion of peers in programs for PWUD has demonstrated benefits for program participants, peers, service providers, and the broader community.^{21,22}

In most activities ($n = 75$), the description made it clear that PH agencies were leading the implementation of the activity. While this could be explained by the fact that OD2A funds health departments directly, it also brings into question whether true partnerships are occurring. We were unable to determine what, if any, role PS partners were playing for 8 activities out of the 109. Collaboration across sectors can be difficult, but being an activity within this strategy should, at a minimum, mean that roles for both agencies are clearly outlined.

Similarly, for 4 activities that fall under the objective of bridging gaps, we were unable to determine which stage of overdose risk and de-escalation strategy applies. This could mean that the way in which the activity addresses overdose risk is unknown or that the activity does not directly address overdose risk. In the future, recipients could use the COR framework stages and strategies to plan activities and describe them in any reports, ensuring that proximal intervention on overdose risk is occurring.

Several limitations should be considered in the interpretation of these findings. First, we relied on APRs to provide sufficient information on the activities. Descriptions in these reports are brief and may have been missing information that could further explain each partner's role in the activity or refine categorization along the overdose risk framework. Abstracters may have misinterpreted the information provided in the APRs. To address this limitation, clear activity definitions and corresponding performance measures could be developed for more consistent application and evaluation. Next, subsequent analyses will determine the completeness and impact of these activities, as this was outside the scope of this analysis. We assessed APRs from the second year of the funding period, and 2 more years are left in the cooperative agreement (or funding) cycle. While impact of collaborative partnerships is often difficult to assess, program evaluation is needed to build knowledge of what is effective.² Additional research in this area has an important role to play by articulating the indicators and data points that can inform both sectors and enhance outcomes for populations of focus.⁸

In addition, the authors of the COR framework acknowledge that it captures a trajectory that is unrepresentative for all PWUD, as people can skip stages or stop indefinitely at a stage. Notably, SUD is not a necessary step to advance from active drug use to fatal or nonfatal overdose, as overdose occurs among people without an SUD.²³ This further supports the idea that comprehensive overdose prevention efforts target all stages of the continuum to reach all people at risk of overdose. Finally, we cannot ignore the impacts of the COVID-19 pandemic, beginning in 2020.

Implications for Policy & Practice

- Recognition for partnerships between PH/PS agencies as an innovative strategy in a drug overdose prevention effort is growing, as demonstrated by their inclusion across federal strategies and funding initiatives, including CDC's OD2A cooperative agreement.
- In planning, implementing, and reporting on PH/PS partnerships to reduce overdoses, jurisdictions should consider the stages of overdose risk and de-escalation strategies presented in the COR framework in order to ensure proximal intervention occurs.
- Although PH/PS partnerships can occur at any stage of overdose risk and employ any de-escalation strategies, those planning programs should also consider meaningful partnerships with PWUD and intervening where feasibility and impact can be optimized.

These activities were implemented from September 2019 to August 2021, and many were likely abbreviated or delayed as health departments and their staff, as the recipients of these funds, were seconded to the COVID-19 response.

Despite these limitations, this inventory breaks down activities implemented to advance PH/PS partnerships as part of a national overdose prevention effort. It adds to evidence that both the PH and PS sectors are increasingly attempting to address complex social issues through shared aims, but substantial work remains to be done.⁸ Those planning and implementing overdose prevention programs at the intersection of PH/PS can use this inventory as a guide, knowing that PH/PS activities can occur at any stage of overdose risk and employ a variety of overdose prevention strategies.

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