Measuring Naloxone Distribution and Use in Minnesota: A Brief Landscape Analysis

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Executive Summary

The goal of the state and its partners is to ensure that every individual can access naloxone immediately when needed. Achieving this goal, referred to as naloxone saturation throughout the report, requires a thorough understanding of the supply and demand of this life-saving drug across our state. To accomplish this, Minnesota Management and Budget (MMB) conducted a brief landscape scan of our current data on naloxone distribution, availability, use, and follow-up care. We find the state currently lacks important information to measure saturation; our existing data is not sufficiently timely, detailed, or integrated, and notably, it does not encompass major sources of distribution. This hampers our ability to respond to local needs for naloxone. This issue is underpinned by two related challenges:

First, understanding naloxone distribution and use and opioid harms is not what our legacy data systems are designed to do. The strength of our administrative system is tracking individuals' formal interactions with institutions, such as hospitals, emergency medical services, and medical examiners. These systems, in particular, track transactions with state-administered funding, like insurance claims, grantee reimbursement, or wholesale purchases from manufacturers. This data is presently available and used to inform decision-making, but lack of resources means this information is often siloed and underused. Our knowledge is much more limited, however, when examining actions that do not touch formal institutions, such as in the private use of naloxone or in overdoses that go unreported. To have the information needed to drive consistent use necessitates new data sharing, collection, and analysis.

Second, the state has a decentralized system for distributing naloxone, whereby a wide array of groups procure and distribute naloxone directly from manufacturers, distributors, and suppliers. While a significant portion of naloxone is funded through grants managed by the state, the state itself facilitates only a small fraction of these purchases directly. This makes it difficult to understand the actual number of doses available, where, and in what time frame. In review of reporting data, the report identified:

- 52,828 naloxone kits reportedly purchased through state-administered grants in FY 2023. This is, however, a low estimate, as grant programs inconsistently request, collect, and store this data.
- 31,100 doses dispensed from Medicaid in FY 2023 and 5,200 from Medicare in CY21.
- 2,952 doses purchased by the Department of Corrections for justice-involved populations in FY 2023.
- 360,000 doses self-reported from governmental and nonprofit distributors. Many of these doses were purchased using funding from state-administered grants reported in bullet one, though there is insufficient data to identify the overlap in the two.
- The state does not have data on purchases funded by other entities, including the Federal government, Tribal Nations, local jurisdictions, private philanthropy, and private citizens.

What gets measured gets managed, and this low data quality means the state cannot well manage naloxone supply across the state. While the nature of naloxone use means we will never have a perfect picture of saturation, states across the country, including Maine, Ohio, Rhode Island, and Virginia, have invested resources to better use existing and collect new data to improve their collective understanding and response. To improve our ability to measure and respond to naloxone needs, Minnesota could:

1. **Develop a Strategy, Measures to Monitor Progress, and Define Action**
    - Minnesota needs to first define naloxone saturation goals in collaboration with national, state, and community experts, and actively monitor a small number of reliable measures of saturation. Any strategy should include how the state and its partners will collectively act when our data tells us a community has an insufficient supply.
    - Any future changes to data collection should minimize burden on respondents, and, most importantly, be collected only if it will be used to inform action. This means the data the state collects must be done so consistently and with forethought into how it will be analyzed to provide meaningful insights for action.
2. **Improve Quality and Use of Existing Data to Promote Action**
    - To improve data quality requires investment in collection, integration, analysis, and reporting. In a decentralized distribution system like Minnesota's, this requires additional effort and close collaboration with external partners.
    - There is opportunity to leverage existing data sources, such as EMS response, overdose records, and healthcare claims for targeted intervention. It is also beneficial to make programmatic and statutory changes to enable data sharing and improve reporting in legacy systems.
    - To understand the total amount of naloxone entering the state from manufacturers and over-the-counter retail sales, the state could supplement state data with private-sector data.
3. **Create New Understanding with Better Engagement at the Frontlines**
    - Segmentation in state and local response efforts make it difficult to understand the needs at the frontlines. The state could create a brief "pulse" survey with frontline organizations to gauge naloxone needs and invest in surveying and interviewing of individuals in active use.
4. **Improve Consistency in Data Collection and Reporting for State-Administered Grants**
    - Agencies, working collaboratively across the enterprise, can enhance the quality of our data by standardizing and strengthening grantee reporting. This can ensure consistent, meaningful, and transparent data collection on naloxone purchases and distribution.

This report underscores the critical need for a data-driven strategic plan to address naloxone distribution challenges in Minnesota. In pursuing this work together, the state and its partners can bolster equitable access to this life-saving intervention, increasing the opportunity for individuals to enter treatment and reach long-term recovery. The following sections provide background on the need, detail our present systems, highlight work in other states, and further discuss potential next steps.

Introduction

The opioid epidemic continues to harm individuals, families, and communities around the state. Opioid-involved overdose deaths have more than doubled since 2019, driven primarily by the increase in deaths involving synthetic opioids, such as fentanyl (seen in **Error! Reference source not found.**). During this period, the state has seen a similar doubling of hospital-treated nonfatal overdoses - with unknown additional number occurring (and going unreported) across the state.

Figure 1. Fatal drug overdoses

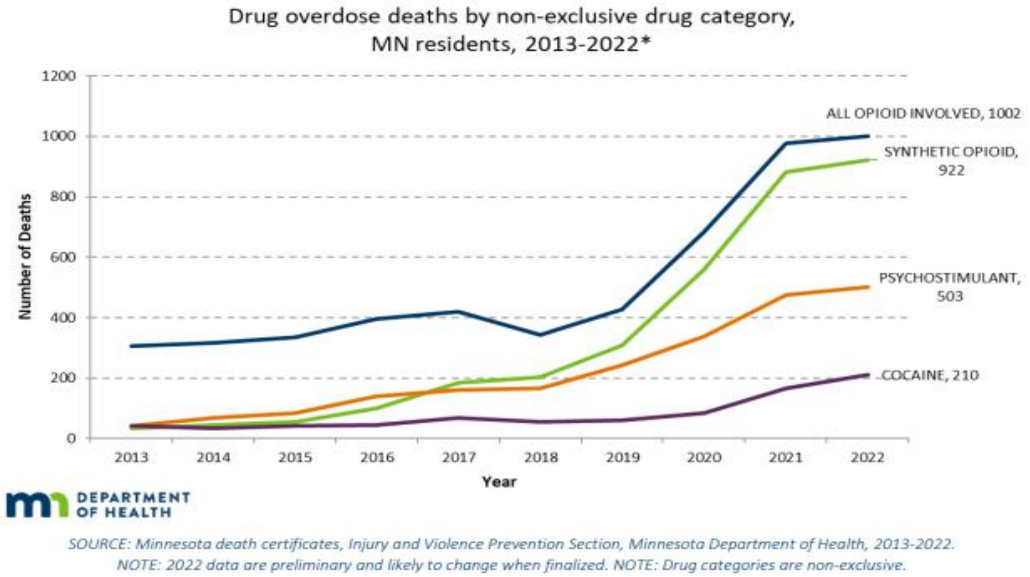


Figure source: Statewide Trends in Drug Overdose: Preliminary 2022 Data Update

While every community has been impacted by this epidemic, the harm has not been felt evenly - with American Indian and Black Minnesotans 14 and 4 times more likely, respectively, to die from opioid-involved overdoses than White Minnesotans. There are also geographic differences in the impact. For instance, in 2022 the Metro area saw 860 overdose deaths, while greater Minnesota had 470 (DeLaquil et al., 2023).

Mitigating the harm of the opioid epidemic requires a robust continuum of care, including prevention, early intervention, harm reduction, treatment, and recovery services. Within this continuum, harm reduction, including naloxone, plays a critical role in ensuring individuals can enter treatment and recovery when they are ready. Naloxone is an opioid antagonist used to reverse opioid overdoses and can be used without medical training or authorization. It comes in two forms, a nasal spray or an intramuscular injection. Individuals can get this lifesaving drug through prescriptions, over-the-counter purchases, and, most importantly for those in active use, through community-based organizations and governmental entities.

Naloxone can save lives. However, it can only be effective if there is naloxone available when people need it and in a form that bystanders know how to use. Currently, the state does not have a clear

picture of how much naloxone is distributed, to whom it is distributed, and how it is used. As one interviewee put it, "Your data at the state is disjointed. Nobody is looking at the constellation [of naloxone distribution]." This report agrees with that assessment and asks how we can do better. Formally, the report seeks to answer:

1. What do we know about state-funded naloxone distribution and use across Minnesota in state Fiscal Years 2022 and 2023?
2. How could the State of Minnesota collect or acquire data to allow for a better understanding of our gaps?

The following sections will provide an overview of naloxone distribution in the state, followed by a brief summary of the administrative datasets that track opioid-related services or harms; a full explanation of strengths, limitations, and application of those datasets can be found in Appendix 1. The report then move to a review of state-administered naloxone grants and how other states are approaching this problem. We end with practical takeaways of how to create the data environment needed to generate the collective intelligence to monitor progress towards naloxone saturation. The intent of this report is to serve as an input to a broader state naloxone strategy that includes measures of success and what to do when we are not succeeding.

Method

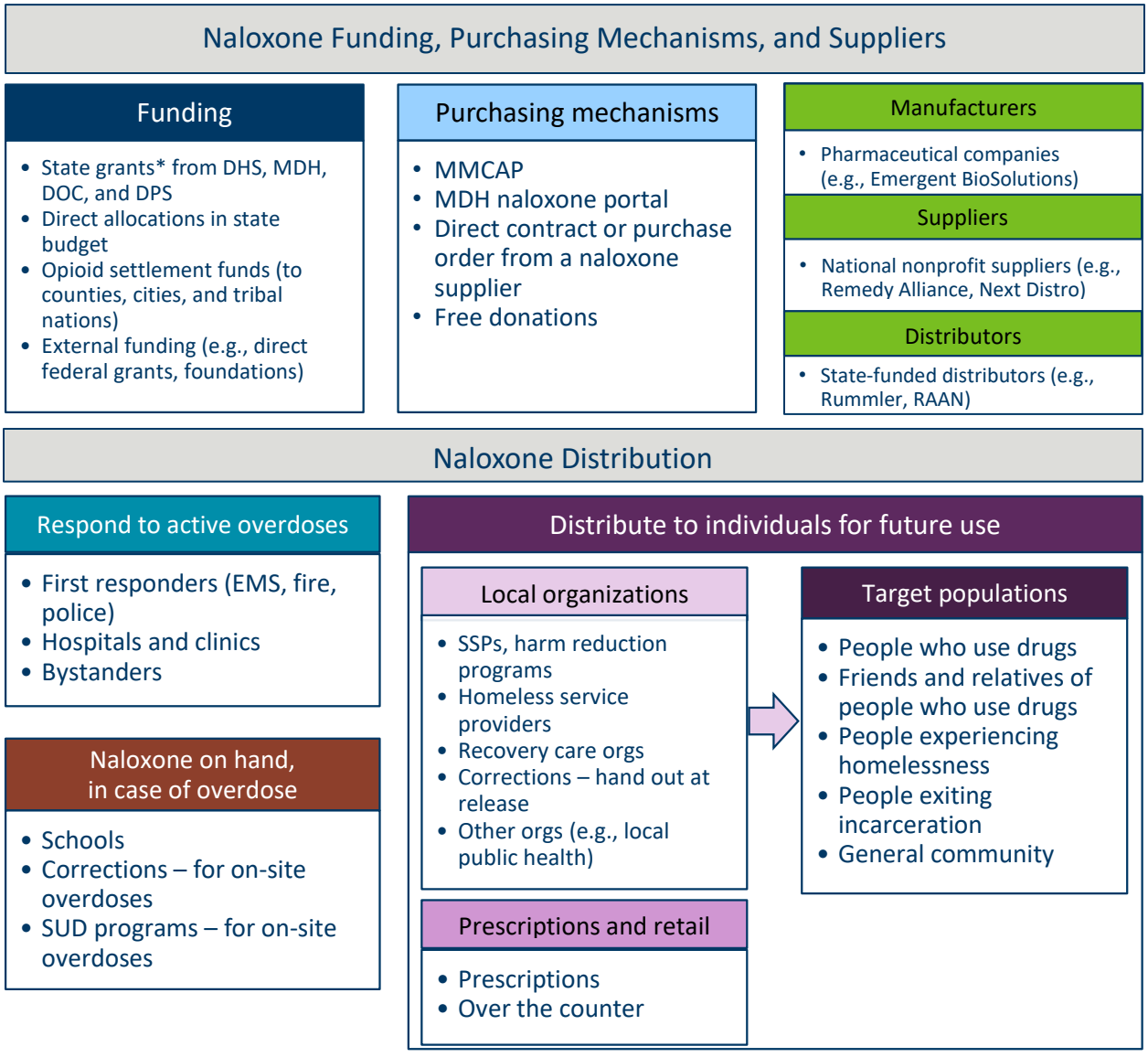
To undertake this landscape analysis, MMB partnered with state agencies, Tribal Nations, counties, and community-based organizations across the state, and consulted national experts. In this rapid review—completed in 90 days—the team emphasized hearing from experts at the frontlines of this crisis. The work involved:

1) Review of administrative datasets related to naloxone, opioid harm, healthcare receipt, and other services provided by federal, state, nonprofit, and private partners. This included interviews with experts that own the data and reviewing the purpose, strengths, limitations, and policy applications of 15 administrative datasets.
2) Interviews with state agency, Tribal, county, and nonprofit partners in Minnesota, as well as other experts from the federal government, universities, and other states. In total, MMB conducted more than 40 hours of interviews or panel discussions.
3) Review of financial aid and grants administered by state agencies in Fiscal Years 2022 and 2023.
4) Review of the academic literature and policy reports on how to measure and report on naloxone distribution and saturation.

Overview of Naloxone Distribution in Minnesota

Minnesota's naloxone distribution system is decentralized, meaning a wide variety of groups purchase and distribute naloxone from manufacturers, distributors, and suppliers. **Error! Reference source not found.** provides an overview of how naloxone is funded, sourced, and distributed in Minnesota. The state funds some of these purchases through grants and direct allocations but only directly facilitates a small number of purchases. Other funding sources include counties and cities (who may use opioid settlement dollars or county levy dollars to make naloxone purchases) and other external sources, including federal grants, foundations, and private citizens.

Figure 2. Minnesota Naloxone Distribution System.



* State grants may come directly from agency budgets or from federal agencies that provide funding to states (e.g., CDC, SAMHSA)

Naloxone Purchasing Mechanisms and Suppliers

In Minnesota, organizations use this funding to obtain naloxone through different mechanisms and a variety of sources. MMCAP is a national cooperative group purchasing organization situated in the Department of Administration that sources naloxone from manufacturers like Emergent BioSolutions. A range of agencies, counties, and other entities go through MMCAP to purchase naloxone. The group also fills orders through the Minnesota Department of Health's (MDH) naloxone portal, which was created in response to the 2023 legislation that mandated certain entities to stock naloxone (e.g., schools, police, shelters for people experiencing homelessness, and others). Other organizations may have contracts to purchase naloxone directly from pharmaceutical companies like Pfizer, Teva, or others.

National nonprofit suppliers, such as Remedy Alliance and Next Distro, provide naloxone to community-based organizations at low or no cost. Other organizations receive naloxone for free from intermediary organizations that receive state funding, such as the Steve Rummler HOPE Network or the Rural AIDS Action Network. Individuals may also get naloxone from prescribers or over-the-counter. Often, organizations and individuals mix and match to source their naloxone.

Distribution to Individuals

Organizations that obtain naloxone also distribute to different populations. Local organizations, including syringe service programs (SSPs) and harm reduction programs, distribute directly to populations at risk for an opioid overdose, including people in active use and their friends and family, and to people who live in or interact with high-risk communities. First responder agencies (such as EMS, fire, and police) use naloxone to respond to active overdoses and also may leave behind doses. Some institutions, such as schools, corrections, and substance use disorder programs, are mandated or choose to have naloxone on hand in case of an overdose. Finally, many organizations both provide naloxone directly to individuals and serve as distribution hubs for other organizations.

This extensive network has collaborated to assemble naloxone supplies and distribute naloxone, frequently achieving impressive results in helping individuals get access to this life-saving medication. Interviewees report this decentralized nature means there are many access points that can fit the different needs of communities. The complexity also means it can be difficult to measure the amount of naloxone that enters the state, where it travels, how much was purchased, the amount spent, and what communities receive naloxone. The next section further details the systems that track naloxone and related opioid harms.

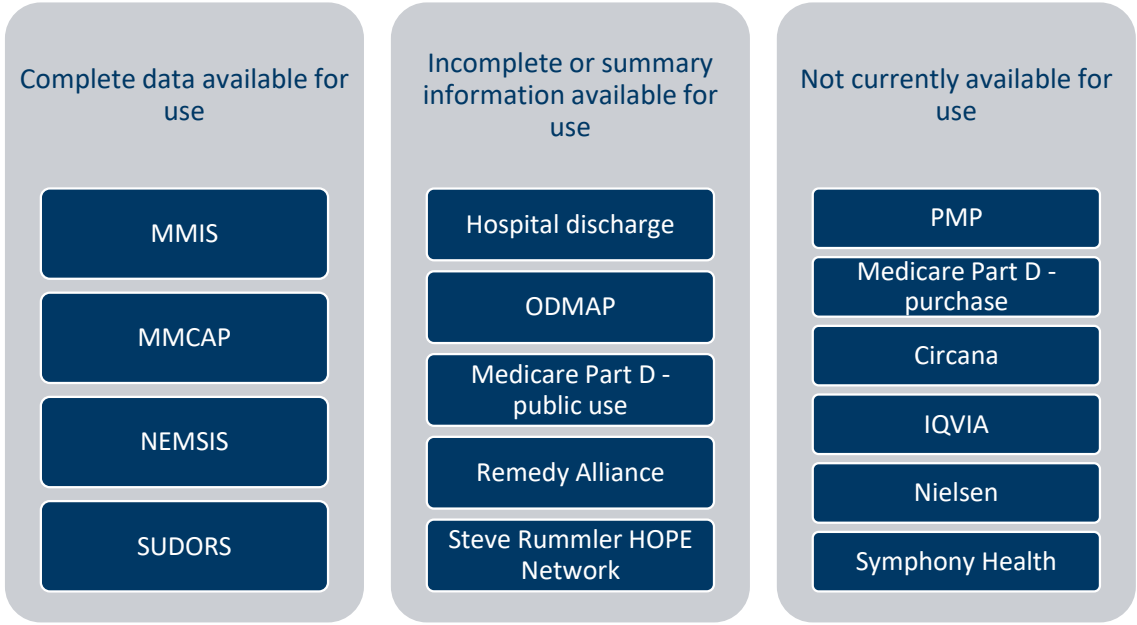
Data Sources that Monitor Naloxone Distribution and Use and Opioid Harms

The state's administrative data offer an important, if incomplete, understanding of naloxone distribution in Minnesota, shedding light on patterns, challenges, and opportunities in addressing overdoses. The strength of our current system is in identifying formal transactions with institutions, such as hospitals, EMS, and medical examiners, related to morbidity and mortality. There is also infrastructure to identify purchases with state-administered funding, like purchases in pharmacies, with distributors, and in other grant fund reporting.

The state has less data when actions do not touch formal institutions, such as in use or non-use of reporting, unreported overdoses or other morbidities, and in direct purchases through manufacturers that do not use state funding. This is especially problematic because non-reporting is most common among underserved groups, meaning our reporting may under-represent needs in these communities.

Despite these constraints, integrating our data can provide an important picture of how well we are doing to address emerging challenges in the opioid crisis response, emphasizing the need for targeted interventions, equitable access, and ongoing adaptations. Looking forward, there is opportunity to invest in this infrastructure to improve our understanding. **Error! Reference source not found.** summarizes what data is currently available for use and at what level (complete or aggregate).

Figure 3. Summary of Data Source Availability for Naloxone Distribution and Use and Opioid Harm



Below, Table 1 outlines available administrative datasets to understand naloxone distribution, use, and opioid harm. This is not a complete list but includes systems, in the view of the informants we interviewed, that have the greatest practical application. In the chart, "Owner" signifies who has permission to make changes or share the data. "Currently available" indicates if the state is using or could use the data today to track naloxone distribution or use or opioid-related healthcare use. "Percent of population coverage" is the percent of the target population currently included in the dataset. "Naloxone distribution" means we can know whether naloxone was purchased or provided, compared to "Naloxone use," which means we can know that naloxone was administered during an overdose. "Policy use" is a course measure of the ability to apply the information, as currently constituted, to action that reduces opioid harm. "Administrative data" refers to data captured automatically for operational purposes. Appendix 1 has a more detailed cataloguing of each system's strengths and limitations.

Table 1. Data Sources for Naloxone Distribution and Use and Opioid Harm

Name	Owner	Currently Available	Population	% of Population Coverage	Naloxone Distribution	Naloxone Use	Opioid-related Healthcare Use	Policy Use
Governmental or Health System Administrative Data								
EHR/Hospital Discharge	MHA	Partial*	Hospital overdose discharges	95%	N	Y; dispensations	Y; overdoses, diagnosed OUD	High
ODMAP	HIDTA (Federal)	Yes	Overdoses in participating jurisdictions	~50% of reported incidents	Y; leave behind kits	Y; use by first responder	Y; overdoses	Medium; limited geographic coverage
Medicare Part D - Public use	CMS (Federal)	Yes	Medicare Part D recipients	100%	Y; prescriptions	N	Y; healthcare claims	Low; not timely (most recent data available is 2021)
Medicare Part D - Data for purchase	ResDAC	No; $	Medicare Part D recipients	100%	Y; dispensations	N	Y; healthcare claims	Low; high cost, lagged data
MMIS	DHS	Yes	MHCP recipients	100%	Y; dispensations	N	Y; healthcare claims	High
MMCAP	ADM	Yes	Naloxone distributor to supplying organizations	Unknown	Y	N	N	Medium; quality data, low coverage
NEMSIS	EMSRB	Yes	Individuals interacting with EMS	~100%	N	Y; use by first responder	Y; morbidity	High
PMP	HLB	No	Prescription Dispensations	100%	N	N	N	Low; naloxone not currently collected
SUDORS	MDH	Yes	Overdose deaths with intent = accidental or undetermined	~100%	N	Y; use in overdose	Y; mortality	High

Private Distributor Data								
Name	**Owner**	**Currently Available**	**Population**	**% of Population Coverage**	**Naloxone Distribution**	**Naloxone Use**	**Opioid-related Healthcare Use**	**Policy Use**
Circana	Private	No; $	OTC purchases	~80%	Y	N	N	Low - incomplete coverage; OTC not typically individuals in active use
IQVIA	Private	No; $	Sales from manufacturers to distributors and dispensed prescriptions	~92%	Y	N	N	Medium - high quality, high-coverage, privately held data. High cost makes it difficult to access
Nielsen	Private	No; $	OTC purchases	~100%	Y	N	N	Medium - OTC not typically individuals in active use
Remedy Alliance	Nonprofit	Yes; Summary only	Naloxone distributor to supplying organizations	Unknown	Y	N	N	Medium - high quality data, unknown coverage, privately held data
Symphony Health	Private	No; $	Dispensed prescriptions	~85%	Y	N	N	Low - Privately held data, high cost, low coverage
Steve Rummler HOPE Network	Nonprofit	Yes; Summary only	Naloxone distributor to supplying organizations and individuals	Unknown	Y	N	N	Medium - high quality data, unknown coverage, privately held data

*Note. Hospital discharge data is partially currently available because MDH receives opioid-related healthcare use from the Minnesota Hospital Association; this data does not include information about naloxone use, but this data exists. MDH may be able to alter their data extract request in the future to obtain this information.

The following section briefly summarizes the main systems for tracking naloxone distribution, use, as well as the related harms caused by opioids. A more detailed explanation of each system and its strengths, limitations, and policy implications can be found in Appendix 1. An important note is that all these systems have statutory restrictions that limit sharing and use to protect the privacy of individuals; we do not fully outline those limits in this report, but those rules play a big role in considering how they may be used to promote understanding.

Governmental or Health System Administrative Data

Several data sources capture the harm caused by opioids, such as nonfatal and fatal opioid-involved overdoses. Importantly, these systems are not well integrated, resulting in a fragmented and siloed view of naloxone distribution and use, inhibiting our ability to grasp the full extent of the opioid crisis. This fragmentation hinders comprehensive analysis and limits our ability to develop holistic strategies to combat the epidemic.

It is important to note that because the state does not own health systems data (e.g., NEMSIS, hospital discharge), use and alteration of this data is contingent on partnership with these private health systems. National Emergency Medical Services Information System (NEMSIS) collects information on EMS responses and encompasses healthcare services rendered outside of the hospital setting for patients experiencing a suspected overdose, including both individuals who are transported to a medical facility and those who refuse transport. This provides critical, real-time information on trends in suspected drug overdoses, including data on demographics, geography, dispatch, patient conditions, transport, as well as naloxone administration, dose, and the patient's response to the medication. In Minnesota, the system is overseen by the Emergency Medical Services Regulatory Board (EMSRB) and analyzed locally by EMS regions and by MDH. While state data coverage is strong, a limitation is that there is an unknown, but likely substantial portion of overdoses that are treated in the community without ever seeking medical care.

Hospital discharge data provided to the state by the Minnesota Hospital Association captures 95% of discharges, providing information about nonfatal overdoses. Naturally, this only captures nonfatal overdoses that seek healthcare. The discharge data is collected from Electronic Health Record (EHR) systems managed by health systems; these EHRs provide a range of valuable information on healthcare use beyond nonfatal overdoses.

Jurisdictions also can participate in the Overdose Detection Mapping Application (ODMAP), administered through the Washington/Baltimore High Intensity Drug Trafficking Area (HIDTA). The system enables first responders to track overdose events in their jurisdictions, creating opportunities to identify trends and target high-need areas for rapid response. The system in Minnesota currently requires manual data entry, though changes in state statute would allow for integration with NEMSIS, reducing manual entry and increasing utility to local departments.

The State Unintentional Drug Overdose Reporting System (SUDORS) was developed by the Centers for Disease Control and Prevention (CDC) and is collected and analyzed locally by MDH. It captures over 93% of overdose deaths, allowing for a detailed analysis of toxicology, location, circumstances, and the presence of intervention.

Other governmental systems capture healthcare claims, reflecting both harms and prescription dispensation. State administrative data from the Minnesota Medicaid Management Information System (MMIS) holds data on healthcare claims, such as ER visits for overdoses, dispensation of naloxone prescriptions, and SUD treatment

records. The MMIS data, while comprehensive, is limited to Minnesota Health Care Program populations. It also is not particularly timely, with claims taking up to three to eight months to be filed and completed.

Medicare provides comparable data for people 65 and older and people with disabilities, but the state does not have direct access to this data, which lags by three to four years. These datasets illuminate distribution patterns, strengths, and limitations, emphasizing the importance of analyzing claims data at both individual and provider levels.

The Minnesota Prescription Monitoring Program (PMP), administered by the Board of Pharmacy, has complete prescription dispensation records for a set of controlled substances and substances of interest. However, the PMP does not currently capture naloxone prescribing, though a change in state statute could allow for that collection, as several other states have done. Such a change would allow for a comprehensive statewide look at naloxone prescribing, not limited to public health insurance programs like Medicaid or Medicare.

The Minnesota Department of Administration houses a purchasing organization, the Minnesota Multistate Contracting Alliance for Pharmacy (MMCAP). MMCAP data on statewide naloxone purchases provide records of shipments of naloxone with label names and national drug codes (NDCs). This data, however, is limited to MMCAP purchases, which, in Fiscal Years 2022 and 2023, tended to be concentrated in the metro area. This data also includes purchases made through MDH's naloxone portal, as MMCAP facilities purchase from Emergent BioSolutions. Portal purchasing increased in Fiscal Year 2024 and is reflected in data used in this report.

Private Data on Naloxone Distribution

Remedy Alliance and Steve Rummler HOPE Network (SRHN) provide at-cost or free naloxone to harm reduction and other local organizations. Remedy is a wholesale supplier that purchases products from manufacturers and then sells or donates the product to organizations who then distribute the products to communities and individuals. SRHN is a purchaser who then provides naloxone both to other organizations to distribute, as well as distributing to individuals directly. Data from private entities, whether they be nonprofit or for-profit, is not owned by the state. Nonprofits, like Remedy (see Table 2) and SRHN often share this data voluntarily in annual reports or as part of grant reporting, but only, currently, at a summary level to protect the identity of purchasers.

Table 2. Naloxone from Minnesota Organizations to Remedy Alliance from 1/1/2023-1/15/2024

Product	State	Quantity	Sales
Purchased naloxone	Minnesota	297,863	$467,518
Free naloxone	Minnesota	55,787	$0.00
Free IM Syringes	Minnesota	20,800	$0.00
Free amber bags for naloxone kits	Minnesota	5,250	$0.00

Our most significant gap in reporting is that we have no direct reporting on sales by for-profit manufacturers or distributors operating in the state. There are, however, a range of companies that sell summary data on distribution and purchases of naloxone. IQVIA and Symphony Health purchase, compile, and resell data on

manufacturers selling to distributors and from naloxone prescription dispensations. The costs are in the tens of thousands of dollars for data on supply that enters Minnesota. This data, however, could expand our understanding of how much naloxone enters the state and where it goes on entry. In other words, this could let us know if we have enough naloxone, overall, to reach saturation, though not whether it is reaching the right people to meet saturation.

Naloxone became available over the counter (OTC) in September 2023 following FDA approval. We identified two companies that collect and sell purchasing data from retailers: NielsenIQ and Circana. These companies use data on barcode scanning, and generally capture large segments of the market (NielsenIQ captures ~100%). This data, if purchased, would allow the state to see OTC purchases across the state.

Federal, State, and Other Naloxone Grant Funding

Multiple state agencies spend funds on naloxone, including supplies, distribution, training, and education. This section details what is known about spending on naloxone-related expenses for grants awarded by the Departments of Human Services (DHS), Health (MDH), Corrections (DOC), and Public Safety (DPS)[1]. Because agencies fund naloxone and track grantee information differently, it is difficult to aggregate this data and expenses are reported separately for each agency. Data aggregated to the best of our abilities from DHS, MDH, and DOC reveal that a total of 101,406 naloxone kits were purchased during Fiscal Years 2022 and 2023 using their grant dollars, direct allocations, and appropriations. This number is certainly an undercount due to missing information from grantees, an unknown number of doses in each kit, and variations in how grantees are asked to report these numbers, making it challenging to aggregate responses. Below, each agency's naloxone funding streams and purchases are described in more detail.

Minnesota Department of Human Services

DHS funds naloxone purchasing and distribution through grants. The two large grant programs for naloxone are the State Opioid Response (SOR) grants and the grants awarded by the Opioid Epidemic Response Advisory Council (OERAC). SOR funding comes from the Substance Abuse and Mental Health Services Administration (SAMHSA) and is typically awarded to states and territories via formula every two years. DHS distributes the SOR funding through an RFP for prevention, harm reduction, treatment, and recovery services.

OERAC was established in 2019 to develop and implement a comprehensive and effective statewide effort to address the opioid addiction and overdose epidemic in Minnesota. The council also makes recommendations to DHS about how to design grants to allocate fees collected from opioid manufacturers and wholesalers. In 2023, OERAC also began overseeing the state's portion of the opioid settlement fund. OERAC awards funds through a competitive RFP process, focusing on services for individuals and families affected by opioid use disorder. This may include harm reduction services, such as naloxone distribution, education, and training.

[1] DPS provides naloxone to law enforcement, but these units were donated in Fiscal Years 2022 and 2023.

DHS also administers funding for naloxone through direct General Fund appropriations. For example, in Fiscal Years 2022 and 2023, the Steve Rummler HOPE Network (SRHN) and the West Central MN EMS Region received $100,000 and $727,300, respectively, in direct appropriations[2] to provide opioid overdose prevention products and services. Lastly, it is likely that additional DHS grant programs include some funding for purchasing and distributing naloxone (e.g., SAMHSA's Substance Abuse Block Grant). However, naloxone purchases are not systematically tagged in financial or grant reporting. We therefore are unable to collect comprehensive data about these grants, and they are not included in the tables below.

The table below (Table 3) displays the DHS grants and appropriations that 1) had expenditures in Fiscal Years 2022 and/or 2023, and 2) used at least part of the grant or appropriation to purchase naloxone. The amounts in the table show the *total amount awarded;* there is no systematic process to identify, report, and aggregate the amount or percentage of the funding that was *actually spent* on naloxone and related expenses. Grantee financial reports may identify spending as on naloxone or may report it under more general categories, like "supplies." Because it is unknown what was included in each expenditure, we chose to report the total contract amounts to measure the potential amount that could go toward naloxone purchases, as well as staff time, training materials, and other costs related to distribution and education.

The table is sorted by the Fiscal Year in which the contract began or the appropriation was made. For example, a hypothetical organization may have received a SOR grant for $200,000 in Fiscal Year 2020 and spent $13,000 in Fiscal Year 2022 (some portion of that on naloxone). That grant would be included as $200,000 in the SOR 2020 cell below.

Table 3. Total DHS Contract Amounts Grants with <u>any</u> Known Naloxone-Related Expenditures in FY 22 and FY 23

Funding Source	Total Contract Amount per Year				
	2020	2021	2022	2023	**Total**
SOR	$1,789,153	$3,444,740	$1,653,072	$535,000	**$7,421,965**
OERAC			$3,498,729	$319,988	**$3,818,717**
General Fund Appropriations	$467,000	$500,000	$360,000	$727,288	**$2,054,288**
Total	**$2,256,153**	**$3,944,740**	**$5,511,801**	**$1,582,276**	**$13,294,970**

This report sought to calculate the total number of kits purchased and distributed from these sources. This also proved difficult because each of the three award sources has different data collection rules, processes, and tools. In Fiscal Year 2023, for instance, we are aware of 30,339 reported kits purchased and 40,677 kits distributed. That, however, is a significant undercount, as several grantees did not provide grant reports, particularly for the general fund appropriations. We also do not have data about how many doses were in each kit or the type (nasal or intramuscular). Moreover, there were slight variations in the way the question was

[2] Direct appropriations refer to the legislature directly naming the recipient, instead of receiving a grant from a competitive process.

asked. Also, it is difficult to know if double counting occurred. Because some organizations that receive grants both distribute kits for free and sell kits, reportedly at or below cost, to other organizations that receive grants, the same kit may be reported twice. Interviews suggest this a low amount of total volume, and the non-reporting is a much more significant factor.

DHS has worked to create new systems and questions, particularly in the OERAC space, to ensure consistency in future reporting for Fiscal Year 2024 and beyond. We see a need to do this across all grants, as well as ensure timely reporting for all those that receive state-administered funding.

Minnesota Department of Health

In Fiscal Years 2022 and 2023, MDH funded naloxone purchasing and distribution through a grant they received from the Bureau of Justice Assistance called the Comprehensive Opioid, Stimulant, and Substance Use Program (COSSUP). COSSUP emphasizes partnership and collaboration across public health, behavioral health, and public safety to develop comprehensive efforts to support those impacted by opioids and other drugs. Seven of the state's eight EMS regions used funds for naloxone, as well as two organizations (Southside Harm Reduction Services and the Rural AIDS Action Network) that distribute naloxone and serve as regional hubs for other harm reduction programs. The spending indicated in the table below (Table 4) includes naloxone as well as other purchases. MMB has information about the number of kits purchased using these funds from four of the seven EMS regions and one community organizations. In Fiscal Year 2022, 11,155 naloxone kits were purchased and in Fiscal Year 2023, 22,489 naloxone kits were purchased.

Table 4. MDH Spending by EMS Regions and Other Organizations (total contract amounts)

EMS region or entity	FY 22	FY 23
South Central MN EMS	$70,266	$137,973
Southeast MN EMS	$57,986	$126,702
Southwest MN EMS	$148,356	$278,061
West Central MN EMS	$122,515	$346,818
Greater Northwest MN EMS	$126,275	$244,113
North MN EMS	$88,758	$172,438
Central MN EMS	$82,736	$214,757
Rural Aids Action Network	$0	$25,708
Southside Harm Reduction Services	$55,047	$170,469
TOTAL	**$751,939**	**$1,717,039**

MDH also facilitates purchases through the State's naloxone portal. These purchases are fulfilled by MMCAP and are captured in the MMCAP data discussed previously. In Fiscal Year 2024, DHS spent $327,180 of the SAMHSA Substance Abuse Block Grant and approximately $3 million from the Consolidated Appropriations Act funding for a time-limited period to purchase free naloxone through the portal for the entities that were mandated by the legislature in 2023 to keep naloxone on hand. This has resulted in 66,504 kits purchased to date (3/28/2024). About $225,000 of this funding remains to be spent, but there is currently no ongoing funding.

Minnesota Department of Corrections

Minnesota Department of Corrections (DOC) does not have direct appropriations to purchase naloxone but uses existing general fund dollars used for healthcare to make these purchases. DOC purchases naloxone to have on hand in prison settings, to supply to field agents, and to provide take-home kits for individuals being released. The table below (Table 5Table 5) details the quantity of naloxone purchased and amount spent in state Fiscal Years 2022 and 2023.

Table 5. DOC Naloxone Purchases in FY22 and FY23

	FY 22		FY 23	
	Naloxone doses purchased	Dollars Spent	Naloxone doses purchased	Dollars Spent
Staff/agent supply	436	$11,281	330	$14,100
Take home release kits	786	$26,059	2,622	$ 74,667
Total	**1,246**	**$37,340**	**2,952**	**$88,767**

County and City Opioid Settlement Reporting

In 2022, Minnesota joined a settlement agreement with opioid manufacturers and distributors that provides millions of dollars to the state to fight the opioid crisis in the coming years. Seventy-five percent of the settlement funds are allocated directly to counties and cities and the remaining 25 percent to the state. Purchasing and distributing naloxone is an allowable use of settlement funds. Jurisdictions that receive settlement funds are required to report broadly on how funds are spent each year, including on naloxone. Annual data is publicly reported on an MMB dashboard. The first full round of data on County and City funding will be available in spring 2024.

That said, current reporting requirements, as outlined in statute and by MOA, do not require detailed spending on naloxone purchases or number of kits. The reporting tool created by DHS does offer an optional opportunity to report naloxone. Tribal Nations have a separate opioid settlement agreement and reporting requirements.

Direct Federal Grants to Community Organizations, Counties, and Others

The federal government, through various venues, also provides grants directly to local governments and nonprofits. The state, however, does not have a clear accounting of this funding. Federal agencies make some information about grants available, such as the name of the organization that received the grant, a description of the grant activities, and the award amount (e.g., SAMHSA's grants dashboard). Typically, it is not detailed enough to identify whether naloxone was purchased or how much.

Summary

The table below (Table 6) summarizes the amount of known naloxone (kits or doses) purchased or distributed in Fiscal or Calendar Years 2022 – 2023 or between 1/1/23 – 1/15/24 using state grants, appropriations, and direct allocations, Medicare, Medicaid, and MMCAP, suppliers, or non-profit distributors. In this data, we can see some of our reporting challenges—with unreported data, variation in calendar and fiscal year, and kits compared to

doses (*i.e.,* kits can range from 2 to 4 doses). Moreover, *we cannot* add this chart to find the total, as there are substantial overlaps that would be create double counting. For instance, SRHN receives funding and reports kit purchases to DHS and Remedy is also their primary supplier, but we do not have data on the exact overlap of these figures. Finally, we have no data on purchases from private manufacturers that that do not use state funds. If we are unsure how much naloxone is being purchased, to where it is being distributed, and when it is used, it makes it challenging to improve distribution efforts.

Table 6. Summary of Naloxone Purchases and Distributions

	Naloxone Purchased in FY 22-23
State	
DHS	65,304 kits
MDH	33,644 kits
DOC	2,458 kits
Medicare	5,200 kits
Medicaid	58,851 doses
MMCAP	28,091 doses
Nonprofit Distributor	**Naloxone Distributed CY 22-23**
Steve Rummler HOPE Network	210,000 doses
Supplier	**Naloxone Distributed 1/1/2023 – 1/15/2024**
Remedy Alliance	380,838 kits
Private Manufacturers and Distributors	No data

This table displays a significant amount of naloxone that was purchased and distributed to individuals and communities, but it is a vast undercount. Missing information from grantees, inconsistencies in obtaining information, and potential double counting issues limits our ability to get a specific amount of naloxone that was purchased, even an amount just using state dollars.

Naloxone Saturation Data in Other States

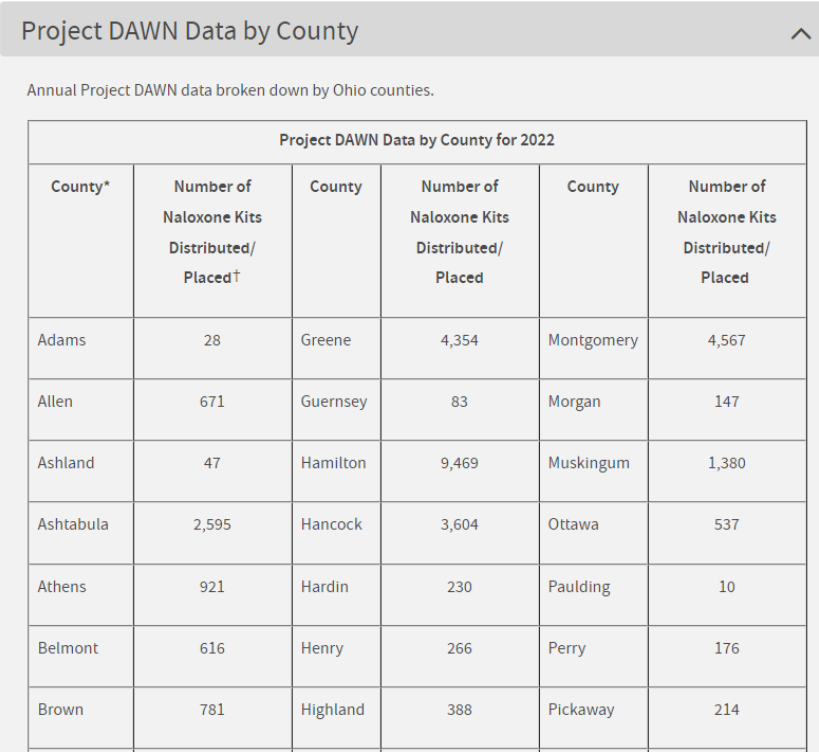
Many other states are doing notable naloxone distribution work to help combat the opioid epidemic. We reviewed efforts in a series of six exemplar states to understand how they are monitoring naloxone saturation. We highlight four leading states below: Maine, Ohio, Rhode Island, and Virginia. In each of the below, we describe how they distribute naloxone, as that impacts the type of data and the necessary systems to make data available.

Maine purchases naloxone wholesale with state funds to provide it at no cost to a small number of "Tier 1" organizations. These organizations distribute to both individuals and a network of "Tier 2" distributors. Tier 2 distributors consist of organizations, such as syringe service programs, community organizations, public health, schools, and businesses. Tier 2 distributors may keep the naloxone to use during emergencies or redistribute it to communities and individuals. Maine's Naloxone Dashboard displays state-distributed naloxone and opioid overdose reversals reported by community partners. The dashboard also displays select EMS data, including the number of naloxone doses administered by EMS and kits left behind following an EMS visit. It also includes ample information about the harms of SUD, progress towards their SUD strategic goals, and connection to resources.

Ohio also has a primarily centralized distribution system. Through its Project Dawn, Ohio distributes naloxone and provides training to 180-190 programs around the state, including health departments, syringe service programs, community organizations, emergency departments, correctional facilities, leave-behind programs with emergency medical services, online/mail-order services, and street outreach. Programs are required to collect some information for every kit distributed, such as when and where it was distributed. Individuals receiving the kit have the option to report demographic and overdose history information. Programs submit data monthly about the number of kits distributed, individuals trained, and known overdose reversals. These data are reported here.

Sample data by county can be seen below in Figure 4. Ohio is currently planning to pilot a survey that is accessed via a QR code on naloxone kits. Individuals who receive naloxone kits will be encouraged to complete the survey after using the naloxone. The survey asks briefly about the circumstances surrounding the overdose, such as if an ambulance was called and how many doses of naloxone were used on the overdosing individual.

Figure 4. Project Dawn Sample Data by County



Project DAWN Data by County

Annual Project DAWN data broken down by Ohio counties.

Project DAWN Data by County for 2022					
County*	Number of Naloxone Kits Distributed/ Placed†	County	Number of Naloxone Kits Distributed/ Placed	County	Number of Naloxone Kits Distributed/ Placed
Adams	28	Greene	4,354	Montgomery	4,567
Allen	671	Guernsey	83	Morgan	147
Ashland	47	Hamilton	9,469	Muskingum	1,380
Ashtabula	2,595	Hancock	3,604	Ottawa	537
Athens	921	Hardin	230	Paulding	10
Belmont	616	Henry	266	Perry	176
Brown	781	Highland	388	Pickaway	214

Rhode Island partnered with Brown University's School of Pharmacy to create a centralized naloxone distribution system. Brown University receives all state-supplied naloxone orders, maintains a mail order system, and captures distribution data from all orders. This data, and other data relevant to drug overdoses, is maintained in its data hub (a snapshot of this hub can be seen in Figure 5). Rhode Island can capture fairly robust naloxone distribution data by integrating data collected from Brown University's distribution to community-based programs, emergency department visits, and the prescription drug monitoring program (which captures naloxone prescriptions). For example, Rhode Island released a report using this data to look at individuals who received naloxone by gender, age, race, ethnicity, and geography. This type of integration offers the chance to get a holistic picture of the individuals served.

Figure 5. Rhode Island's Naloxone Data Hub

The Commonwealth of Virginia recently released a statewide naloxone saturation strategy. One of the main takeaways was the need to prioritize naloxone distribution to areas with the highest impact, particularly to partners who are more likely to distribute directly to people who use drugs and their friends and families. Virginia developed a model to use various data points related to the opioid crisis to identify geographic areas that are at high risk for overdose and should be prioritized in future naloxone distribution plans. The indicators included in the prioritization model were fatal and nonfatal drug overdoses, opioid prescription volume, and naloxone administrations by EMS providers and others. Virginia is also developing a pilot program that provides individuals identified as high priority access to naloxone through direct shipments to their homes.

The states described above all have much more centralized naloxone distribution systems than Minnesota. When we talked with representatives from these states, they mentioned that community organizations are still getting naloxone from sources besides the state, such as directly from manufacturers or through wholesale distributors, like Remedy Alliance, but they believe this represents a small portion of the naloxone, unlike in Minnesota where that likely represents the majority. While other states have a more centralized system, more active sharing of data and coordination of activities in a more decentralized system like Minnesota's could lead to similar understanding of naloxone distribution. Currently, however, Minnesota lags these states in our understanding of distribution and ability to use that information to inform potential interventions.

It is important to note that while the government primarily funds and supplies naloxone in these states, community-based organizations are vital in distributing it to the community. This allows the government to have detailed data on naloxone distribution across the state, while community-based organizations have the agency to serve the communities they know best. This system creates a naloxone distribution data system that is consistent, comprehensive, and timely. This data can also be linked with other state administrative data to quickly identify inequities in access to naloxone, specifically, what areas and groups are underserved. The states above (such as Rhode Island and Maine) demonstrate that a more centralized distribution system can lead to data tools for community-organizations, government, and individuals alike, to inform decision-making to improve access to naloxone for those who need it most.

Practical Takeaways for Improved Data Availability

This report focuses on what we know and do not know about naloxone distribution and use. With high-quality data, the state is better able to meet our collective aim of ensuring individuals have access to the naloxone they need, when they need it. In doing so, we can provide the time necessary for individuals to make their path to treatment and long-term recovery. As detailed, there is a strong foundation in systems to do that work, but, there are currently meaningful gaps in our understanding of the availability of naloxone across the state. This section highlights those gaps and the potential to fill them with actionable information.

1. Increase Data Collection Related to Saturation: Understanding Use and Distribution

Understanding naloxone use is difficult. It is not possible to know about naloxone that is distributed but unused. When naloxone is used, it's very often done in private, making it difficult to know the extent of use. That said, one can get a sense of use, though imperfect, from the supply and demand for naloxone. Tracking demand and how well our supply is keeping up provides a road map to understanding if the state has reached saturation. Moreover, combining distribution and use information with data on the related harms of opioids, including morbidity, healthcare use, and mortality gives us additional insight into how well we are mitigating harm and where we may improve. There is, however, improvement needed in each of these areas.

In part, this has to do with Minnesota's decentralized system for purchasing and distributing naloxone. The state has several large distribution hubs, each with contracts to manufacturers and wholesalers, and with no single coordinator of this activity. While the state administers funding for a significant portion of purchases, data on the purchases themselves is collected inconsistently. Moreover, there are many parts of this system that the state neither funds nor receives data on.

This report does not endeavor to say whether centralization is more or less effective than our present system, but any decentralized system makes coordination and collective understanding more difficult. Assuming the status quo structure, the state must make investments to collect timely, consistent data on distribution from all those who receive state-administered funds. The state may also encourage anonymous and low-burden sharing of distribution data (including time and geography) for those who do not. This information on distribution and use will never be perfect, but we can do much better.

2. Develop a Strategy, Measures to Monitor Progress, and Define Action

The state should only collect data from partners if that data will be used to enhance equity, efficiency, effectiveness, and accountability in naloxone purchasing, distribution, or identifying the related harms of opioids. This means the data that is collected must be done so consistently and with forethought into how it will provide meaningful insights. Moreover, this data should be reported back to the community for transparency and for local decision-making. A common theme in our interviews with community organizations was their active use of data to refine, target, and expand services, as well as a common interest in more information.

Determining the proper measures to collect for decision-making necessitates the state - with strong engagement of its partners - first articulate a clear strategy. This plan would outline how saturation is defined, whether it has been achieved in a community, and what steps would be taken when it has not been achieved in an area. To inform this plan, the state should rely on both local knowledge and empirical research. Irvine and colleagues (2022) published an influential study in which they created a predictive model to estimate reduction in opioid overdose fatalities dependent on distribution of a given amount of naloxone doses. For example, using data from 2017, they estimated that for Minnesota, with 100 naloxone kits (each with two doses) per every 100,000 population, the probability of the naloxone distributed via a community program being used in an overdose where there is a bystander is only 20%. With 1,000 naloxone kits per 100,000 population, the probability increases to 89%. Like all models, this one is not entirely accurate, but is useful. In early 2024, the state had conversations with academics involved in similar work about a potential partnership.

This illustrates just one measure: needed supply; a state strategy would include multiple measures all of which are reliable, timely, granular, reflect a commitment to reducing disparities, and have a strong proxy power for wellbeing. To implement the strategy, the state must then continuously monitor progress on measures, regularly convene partners, and promote collective action to get resources where they need to be. The set of measures can likely be relatively narrow, can mostly come from existing data, and should be available in a public facing site. As noted in the first section, perfect should not be the enemy of the good here. The state should move with the data in hand now while taking steps to improve future data collection.

3. Better Use Existing Data for Actionable Knowledge

While there is not perfect knowledge, there are legacy administrative data systems that help us understand how to respond to the opioid epidemic. Administrative systems are, by definition, used to capture operational data, especially data on transactions. This means our data is best for those interacting with formal healthcare and grantmaking institutions. In addition to existing governmental data, there are datasets for purchase that capture private-sector data on distribution and prescribing. There exist opportunities to use our existing systems better and incorporate new administrative data, namely:

1) **Invest in the integration, analysis, and sharing of summary data to enhance our combined efforts.** As the report notes, we do have several valuable legacy sources, especially around use. That said, informants note there is often a lack of investment in the infrastructure and staff researchers necessary to turn that data into insights. Of note is that our existing systems are not well integrated, resulting in a fragmented and siloed view of naloxone distribution and use, inhibiting our ability to grasp the full

extent of the opioid crisis. As one respondent perfectly put it, "Your data at the state is disjointed. Nobody is looking at the constellation." This fragmentation hinders comprehensive analysis and prevents us from developing effective, holistic strategies to combat the epidemic broadly, and deliver services that meet the unique circumstance of individuals, specifically. This takes infrastructure and staff resources but is how to actually articulate if saturation is reached, and, when it is not, what needs to be done to improve. It is also important to make summary data publicly available; improving the health of Minnesotans struggling with OUD is a collective problem that takes coordination of hundreds of organizations and thousands of professionals. To successfully collaborate and align efforts, there needs to be a shared understanding of the problem.

There are encouraging efforts by agencies to integrate and collaborate in use of these sources to understand the holistic health of individuals. For instance, MDH received a federal grant to integrate death certificate, EMS, hospital discharge data, overdose surveillance, correctional, and homelessness data to provide a comprehensive picture of what we may do to promote long-term recovery, especially for populations disproportionally impacted by opioids. More sustained investments like the above will improve our effectiveness.

2) **Amend statute to allow for sharing of NEMSIS data in ODMAP.** ODMAP is used by local law enforcement, first responder, and public health agencies to track suspected overdoses in near-real-time, allowing them to quickly respond during an overdose spike and to use the data for allocating prevention resources. That said, it requires a tremendous amount of manual data entry, which takes time, meaning it often does not happen. This creates a cycle, where local law enforcement and other first responder agencies do not enter data and, therefore, leaders lose trust in ODMAP because it is missing data, further decreasing the incentive to enter data.

   To remedy this issue, more than 20 other states allow EMS data (NEMESIS) to automatically flow into ODMAP, decreasing manual entry and improving reliability. To allow this sharing with ODMAP, EMSRB believes a statutory change would be necessary (144E.305, subdivision 3). The state could also require the entry of overdose data, though the state should first consider integrating NEMSIS and ODMAP to ensure this is not duplicative data entry. For example, Maryland's HB0359, signed into law in 2018, mandates EMS report all suspected overdose events to ODMAP.

3) **Amend statute to require reporting of data on opioid antagonists, including naloxone, to the Prescription Monitoring Program (PMP).** Currently, the state cannot get a full picture of prescribed and dispensed naloxone across the state. That leaves us without an understanding of the scale of these purchases and whether there may be opportunities to increase naloxone prescribing by providers. Statute affords the Minnesota PMP to collect data on "drugs of interest" without classification of those drugs as controlled substances. With a statutory change, the PMP could, with no new infrastructure, follow other states in collecting data on opioid antagonists, including naloxone. The PMP could share this data in aggregate or summary form, similar to how they share other data in their annual reports. PMP staff have also noted they can automatically filter out data on naloxone distribution that goes to providers on patient PMP reports. This would mitigate a concern that the presence of naloxone may unintentionally create stigma.

4) **Discuss with EMS regions the potential to collect new data in NEMSIS.** EMS data is one of the most important sources of data about our response to opioid overdoses, including naloxone use. This data could be strengthened by capturing additional data elements, including custom elements used by other states that have more detail on naloxone administration prior to EMS arrival and whether EMS distributed leave-behind kits. Additional data entry would be necessary; if the state determines this additional data is important for monitoring implementation of state strategy, officials should collaborate with EMSRB and local EMS to see what may be feasible and any additional costs, considering the substantial existing workload.

5) **Supplement governmental data with the purchase of deidentified, summary data on distribution.** Even with these changes, the state has two other large gaps that governmental administrative data cannot capture: 1) understanding the full volume of naloxone from private manufacturers into the state (and to where) and 2) understanding the volume of over-the-counter (OTC) purchases at retail outlets. The former gives us the full scale of all naloxone that enters the state, allowing us to understand whether there is a sufficient amount, particularly in places where no state funding was used in the purchases. The latter lets us understand where private citizens are purchasing naloxone over the counter. Private entities, including NielsenIQ and IQVIA, sell deidentified data on the nature of both manufacturer sales and OTC purchases sales, including products and geography. This data is relatively expensive but would fill in a sizable gap in our understanding of saturation.

4. Create New Understanding with Better Engagement at the Frontlines

Those working at the frontline of this crisis have tremendous knowledge of the needs of the people they serve. Harm reduction organizations, homeless shelters, recovery care organizations, first responders, local public heath, and other social assistance organizations know if saturation has been achieved for the people they serve. These organizations already share that information with the state formally, through grant reporting, and informally, in forums and professional networks. This knowledge is siloed, however, making it difficult for everyone to have a shared, representative understanding of the wide array of community needs. This is especially true in periods of rapid change, like when a particularly dangerous batch of fentanyl hits the state. As noted, where we do not have collective understanding, we struggle to take collective action.

One approach to create collective intelligence is to conduct regular, short "pulse" surveys, similar to how the U.S. Census surveyed people to understand the rapidly changing financial needs of Americans in the pandemic. This type of data collection asks a representative cohort of respondents to complete brief surveys. In Minnesota, you could imagine a 3 to 4 question monthly survey to local organizations that asks:

a) Yes/No - Can you provide all individuals all the naloxone they request?

b) Never/Sometimes/Often/Every Time - How frequently are you negotiating up the number of kits requested by a participant?

c) Yes/No - Are you encouraging secondary distribution of naloxone?

d) [Number] How many doses are you currently including per kit?

With the proper response, this information could help us understand naloxone needs across the state. That said, the state would need to have a strategy that dictates how to act when they report low availability. If it is not used to drive action, busy local organizations will stop completing the survey. Also, informants note that local distribution hubs and organizations frequently share naloxone where there is need in a much nimbler way than the state. If the state undertakes this survey, it should be made publicly available to help promote this rapid sharing.

One other meaningful gap is the state does not hear directly from the individuals in active use. We are not aware of any current efforts, by survey or interview, to capture what individuals in active use want or need. While our harm reduction, treatment, and recovery communities relay this information to the state, the state should also be investing in learning how to better provide naloxone, services, and connection to treatment. This could mirror efforts by the Minnesota Justice Research Center to do ongoing qualitative interviews of individuals under supervised release, the Minnesota Story Collective to hear from Minnesotans on the pressing needs of their communities, or state/federally funded Wilder's Minnesota Homeless Study. Like those projects, this could be led by non-state qualitative researchers partnering with local community organizations to ensure privacy.

5. Improve Consistency in Data Collection and Reporting for State-Administered Grants:

DHS and MDH provide federal, state, and settlement funding to organizations to purchase naloxone. Grantees may use this funding to directly purchase naloxone from a pharmaceutical manufacturer, purchase (or get free) from a wholesaler (e.g., Remedy Alliance), purchase (or get free) from another entity (e.g., Steve Rummler HOPE Network, Rural AIDS Action Network), or purchase over the counter. This system can make it difficult to understand naloxone distribution.

In theory, this information on distribution is captured through grant reporting. In practice, grant collections have different statutory reporting requirements, are often administered by different teams or agencies with different collection elements, rules, and time frames. Review of grant data and interviews reveal that sometimes grantees fail to report accurately or at all to the state. This makes it very difficult to combine and aggregate this data in a consistent and timely way. This means, to date, our data on distribution and purchasing is not high-quality and offers diminished utility to decision-making.

To address these problems, the state must collect required reporting from every grantee each period; when this reporting fails to happen, the state should provide assistance to the grantee to get this information and, if that is ineffective, enforce sanctions outlined in grant contracts until reporting occurs. The state should also identify a short set of consistent questions about naloxone purchases and distribution for all relevant grantees. They also should agree on how they will collate across grants, and report this information on kits and dosages, by type, publicly. These questions could look like this:

Note: Please report the total number of single doses, rather than the number of kits. For example, a Narcan kit with two doses should be counted as '2.'

1. How many total doses of naloxone did you purchase with funding from this grant?
2. How many total doses of naloxone did you distribute with funding from this grant?

a. Of the total number of doses distributed, how many were given directly to individuals for use?

b. Of the total number of doses distributed, how many were given to other organizations, for them to distribute?

c. Of the total distributed, what percent was nasal (vs. intramuscular)?

3. On average, how many doses do you include per kit?

4. [if not already asked elsewhere in grant report] Which [zip code or other geography] did you provide naloxone using funding from this grant? (Check all that apply)

This effort has already begun with new reporting on Opioid Epidemic Response grants, but it should be expand it to all state-administered grants. There is also the opportunity to encourage those not using state-administered funding to adopt the same questions, particularly through city and county settlement reporting, though by the terms of the settlement agreement this would be optional. To those ends, DHS has adopted similar questions for the 2023 round of settlement reporting. Finally, the state should find ways to have other partners not using state funds for purchases to voluntarily report in a similar manner.

In doing this, it would create a clearer sense of purchases. This knowledge can be combined with other data already collected about geographic area and community served. That said, as discussed in the other states section, this data will still fall short from the centralized distribution models pursued by other states. Having a single distribution point and related administrative data system means there is detailed data on timeframe, geography, and type of naloxone purchased (for an example see MMCAP data in Appendix 1). Also, critically for practice, the data is immediately available, as opposed to grant reporting availability on a biannual or quarterly basis. That said, improving grant reporting can provide critical information to inform practice.

Conclusion

Naloxone has the amazing power to save lives and to buy individuals time to access necessary support and begin a path to recovery. It is incumbent on us, then, to ensure all individuals have naloxone when they need it and that there is a strong available connection to services when they are ready.

This report identifies gaps and outlines actionable steps to better understand distribution and use of naloxone across the state. The state is best positioned to use data when it is tied to a clear strategy with strong performance measures to monitor progress, and there is a plan to act when those measures are not being met. This report also notes the importance of investing in systems to improve data collection, analysis, and reporting, providing a clearer picture of whether saturation has been achieved (and for whom). This includes leveraging existing data sources, collecting new data, integrating our datasets, and adding private-sector summary data. Frontline data collection, both of staff and participants, could also fill a vital gap role in better identifying the needs of those in active use. In taking these steps, the state can enhance what we know about naloxone distribution and use, improving equitable access and fostering healthier communities.

Appendix 1: Data System Details

Governmental or Health System Administrative Data

Hospital Discharge Data

Overview. MDH receives data from the Minnesota Hospital Association that includes information from 95% of hospital discharges for Minnesota residents who were treated at hospitals in Minnesota and select hospital systems in surrounding jurisdictions. This data comes from Electronic Health Records (EHR). It covers all 87 counties and can include reports from all 123 acute care hospitals. The data include emergency department visits and inpatient hospitalizations. MDH uses this data for their Nonfatal Drug Overdose Dashboard and Drug Overdose Dashboard. The quarterly data extract that MDH receives includes information about diagnoses and procedures; however, it does not include information about whether naloxone was administered in the hospital. It may be possible to request this information in future data extracts. As a note, EHRs offer comprehensive information about patient health and insurance claiming; these records are held by private hospital systems. Hospital discharge records reflect a subset of that broader data.

Strengths. This data source provides a statewide picture on opioid overdoses that are treated in hospitals and emergency departments. It is updated every three months and includes demographic data about the people who received care. Without data on naloxone administration available, we cannot speak to strengths specifically related to hospital discharge data on naloxone administration.

Limitations. The dataset does not include nonfatal overdoses that occurred in the community or overdoses that were treated by EMS and not transported to a hospital. It does not capture overdoses that were treated at federally-funded facilities (e.g., the VA or Indian Health Services), tribally operated facilities, stand-alone psychiatric facilities, or out of state facilities (with the exception of North Dakota, for which data is included). Without data on naloxone administration, we cannot speak to limitations specifically related to hospital discharge data on naloxone administration.

Policy Application. This data is currently used to identify geographic areas of high nonfatal overdoses. If information about naloxone administration was added to the data that MDH accesses, it would provide insight into the extent of naloxone use in hospitals and emergency departments. This is currently a gap that we do not understand well. For example, it may be that very few people receive naloxone in these settings because they have already received it from EMS or a bystander; however, we are not currently able to assess this.

Overdose Detection Mapping Application Program (ODMAP)

Overview. Overdose Detection Mapping Application Program (ODMAP) is a data system administered through the Washington/Baltimore High Intensity Drug Trafficking Area (HIDTA) to track suspected overdose events responded to by first responders. Data can be integrated into ODMAP from first responder reports and other record systems (such as EMS record systems) to produce a mapping tool that can be used to identify overdose spikes in communities. ODMAP is not a system of record and the agency inputting the data is the owner of that

data. It aims to create opportunities for immediate response in high-need areas. ODMAP also tracks whether naloxone was administered during overdose events.

Strengths. ODMAP produces a real-time map allowing agencies to quickly identify spikes in overdoses. Once the data is uploaded to the system it is generated into the map. No further action is needed by the agency to have the data synthesized and ready to use. Additionally, ODMAP has the flexibility to capture several indicators related to naloxone administration and distribution, including if naloxone was administered or left behind by a law enforcement officer, EMS, or a bystander and how many naloxone doses were administered.

Limitations. Currently, ODMAP is limited in its ability to be used as a data source for naloxone use in Minnesota. Because it is not required for all first responders to use ODMAP, it is not used consistently throughout the state. Among the agencies signed up for ODMAP, only 55% of law enforcement, 3% of fire, and 3% of EMS consistently used the system in 2022. An analysis by MDH showed that in 2022, ODMAP captured 50% of overdose fatalities that were identified in death certificate data, and 52% of the non-fatal overdoses that were identified in hospital discharge data. Metro jurisdictions are generally more likely to enter data consistently. Additionally, ODMAP is designed so that only agencies inputting the data can download the detailed data, though other entities can see high-level data about overdoses statewide. Given these limitations around the current entry of data, ODMAP data is not representative of overdoses statewide, especially in Greater Minnesota.

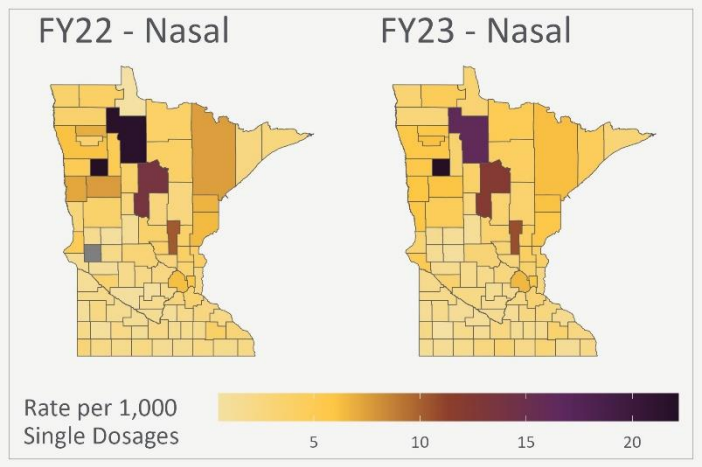
Policy Application. ODMAP has the potential to be a useful source of naloxone use data if more agencies begin using it consistently. Several other states have required the entry of suspected overdoses. For example, Maryland's HB0359, signed into law in 2018, mandates EMS report all suspected overdose events to ODMAP. Many states have also automated EMS information flowing into ODMAP. This means much of the data is pre-populated. While law enforcement must still enter some information manually, pre-populating EMS data alleviates much of the administrative burden on first responders. With more consistent use across the state and an automated flow of EMS information, ODMAP could become a useful tool in detecting spikes in overdoses across the state, which could help inform which areas need more naloxone and other harm reduction, prevention, and intervention resources.

Medicaid Management Information System (MMIS)

Overview. Medicaid Management Information System (MMIS) is a database that stores claims data for Minnesota Health Care Programs (MHCP). Medicaid provides healthcare coverage to low-income adults and children under age 65. MMIS is operated by DHS and is primarily used as an electronic health care record for paying claims. MMIS contains statewide naloxone prescription claims among MHCP populations at the person level and includes label names and national drug codes (NDCs) on the claim, package size, strength of dosage, route of administration, county of residence of the recipient, prescriber, and the date of the claim.

The below map (Figure 6) was creating using MMIS data to show the number of prescription claims made for nasal naloxone for individuals using MHCP in Fiscal Years 2022 and 2023. Rates appear highest in northern Minnesota compared to other parts of the state. In total, 27,687 doses were distributed through MHCP prescriptions in Fiscal Year 2022, and 31,164 were distributed in Fiscal Year 2023. Both years, 89% of the prescription naloxone was nasal and 11% was intramuscular.

Figure 6. Number of Prescription Claims made for Nasal Naloxone for Individuals using MHCP in FY 22 and FY 23.



Strengths. MMIS provides comprehensive information on the statewide claims of MHCP healthcare services, including naloxone dispensed to individuals. Information can be tracked relating to the dates an individual had naloxone dispensed to them, along with the amount, strength, and route of administration. It also has data on utilization of treatment, mortality and morbidity, and individual demographics.

Limitations. The data is limited to naloxone prescribed to MHCP populations. This is not a common method to access naloxone, especially for those in active use. This limits our ability to understand saturation. Moreover, prescribed naloxone reflects connection to care and prescriber behavior, rather than need or prevalence.

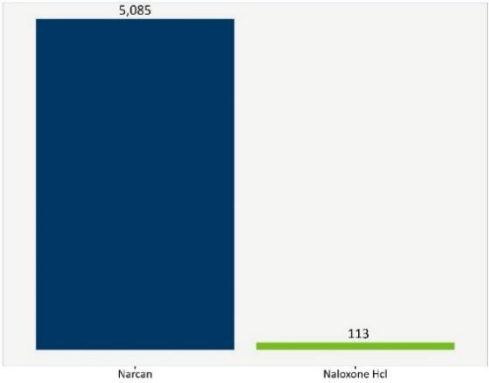
Policy Application. MMIS data has utility in providing information around statewide naloxone distribution among MHCP-eligible populations. More importantly, it allows us to see claims on harms of opioids (mortality and morbidity), as well as use of treatment services at an individual level. While the expressed purpose of MMIS is to pay claims, it offers comprehensive retrospective data at the recipient and provider level.

Medicare Part D

Overview. Medicare (health insurance for individuals aged 65 and older and individuals of all ages with certain disabilities) is a federal program. Therefore, the state does not have access to its data. Medicare recipients utilize Part D of their plans to purchase prescriptions. There are two avenues of accessing this data: 1) prescriptions data by state and drug are publicly available through the Centers for Medicare and Medicaid Services website and 2) purchased through the Research Data Assistance Center (ResDAC).

The publicly available data contain information on prescription drugs provided to Medicare beneficiaries enrolled in Part D by physicians and other health care providers. The most recent data is for 2021 and aggregated by state. The graph below (Figure 7) shows the total number of naloxone claims for Narcan (nasal) and Naloxone Hcl (intramuscular) in Minnesota in 2021.

Figure 7. Number of Medicare Part D Naloxone Claims in Minnesota in 2021



For purchased data through ResDAC, naloxone prescription data can be found in the Part D Event Files. This data file includes information about NDC codes, quantity of drug dispensed, cost, and payment. Information about drug characteristics can also be requested, including the brand name, generic name, strength, and form of drug. Medicare Part D prescription data are at the "research identifiable level," meaning that it is at the individual level, includes some patient demographic information (e.g., date of birth and gender), and that some sort of IRB approval is required to receive this data.

Strengths. This data is comprehensive: all Minnesotans using Medicare would be represented in the sample. Individuals over 60 tend to be prescribed more opioids compared to younger age groups. Therefore, it is critical to have a complete look at this age group to see if they are receiving naloxone prescriptions along with their prescription opioids.

Limitations. The publicly available Medicare Part D data is lagged by two years, and locations where data counts are less than 11 are suppressed. ResDAC does provide individual-level data, but the dataset is costly. The cost of purchasing data can be estimated using this tool. To purchase Part D Event Files for 5% of the Medicare population for 2020, 2021, and 2022, the estimated cost is $30,000. It is unknown how much the cost would be for a specific Minnesotan sample. Additionally, though the data for purchase are more recent than the publicly available data, there is still a one-year lag. This makes it difficult to use the data to identify current trends in naloxone prescriptions in this population.

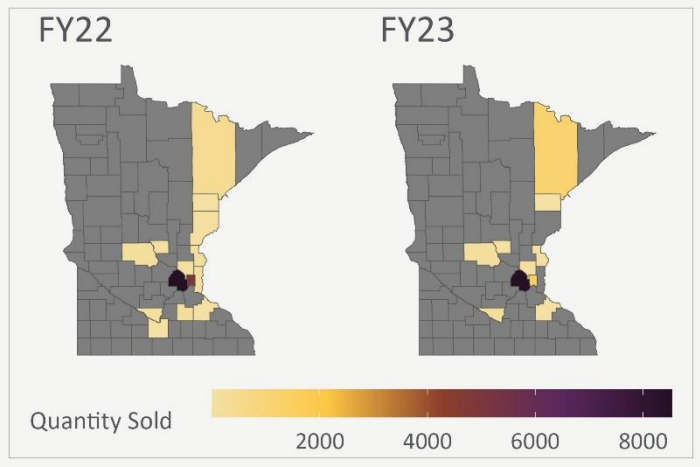
Policy application. This data in combination with the already-existing prescription data for low-income Minnesotans using MHCP would provide important insight into prescription naloxone distribution to two vulnerable populations. Currently, there is no information on how many people using Medicare access naloxone broadly, and specifically through prescriptions. Additionally, this data could help answer policy-relevant questions about the extent to which naloxone is prescribed with opioid pain medicines in this population.

Minnesota Multistate Contracting Alliance for Pharmacy (MMCAP)

Overview. Minnesota Multistate Contracting Alliance for Pharmacy (MMCAP) is a national cooperative group purchasing organization for government-run or -supported entities, such as schools, corrections, and sober homes, and is operated by the Department of Administration's Office of State Procurement. MMCAP data on

statewide naloxone purchases documents shipments of naloxone with label names and national drug codes (NDCs), the zip code associated with the shipment, the invoice date of the shipment, and the quantity shipped. MMCAP also serves as the intermediary to fulfill orders from the MDH's naloxone portal. Figure 9 below displays the quantity of naloxone doses distributed across the state using MMCAP order data from Fiscal Years 2022 and 2023. MMCAP reaches a limited number of counties which are primarily located in or around the metro area, though use is increasing with expanded use of the MDH portal and spending from naloxone funding in FY24.

Figure 8. Doses of Naloxone Distributed through MMCAP during FY 22 and FY 23



Strengths. As an operational database, MMCAP data is both granular and timely with timestamped zip code level data. This type of information allows for a rapid understanding of distribution across the state.

Limitations. MMCAP has limitations in the information available and its coverage across the state of Minnesota. Additional context associated with each NDC had to be gathered from DailyMed in order to populate information around dosage type, route of administration, strength of naloxone, and the quantity of single doses within each package. Also, naloxone purchases through MMCAP encompassed purchases for only 14 counties between Fiscal Years 2022 and 2023, with the majority of purchases centralized in the metro area. Therefore, lack of naloxone in an area likely reflects the customer base instead of purchases or need. Moreover, there may be a need to aggregate data to protect the privacy of purchasers, though this is mitigated by the fact that most purchasers are institutions.

Policy Application. While MMCAP data may only be a portion of state distribution, it has utility in providing information around naloxone distribution among participating government entities. It may be useful in determining rates of naloxone distribution for timescales as short as a day and has specificity in highlighting zip codes in the metro area that may otherwise be lost in aggregations. There is also a collective action problem here that is true of all distributor data; the more regions that purchase from a supplier, the more useful each region's information becomes, given both reach and the need to aggregate data to protect privacy. Any opportunities to combine information from multiple distributors would be extremely valuable.

National Emergency Medical Services Information System (NEMSIS)

Overview. The National Emergency Medical Services Information System (NEMSIS) is a national system that collects patient care information about EMS responses to emergency calls for assistance. Data is collected by states and territories and voluntarily submitted to the national NEMSIS data repository. Variables include patient demographics, reason for dispatch, location, and all information about the care the EMS personnel provided, among others. It holds data related to naloxone, such as if it was administered during the response, how many doses were administered, the strength of naloxone, route of administration, and if it is known that a bystander administered naloxone before the EMS arrived.

Below are two example views from the national Nonfatal Drug Overdose Surveillance Dashboard. Figure 9 shows how counties' rates of non-fatal overdoses captured in the NEMSIS compare to the national average. Figure 10 displays how counties' percents of naloxone administered during an EMS response compare to the national average.

Figure 9. County-level Rate of Non-fatal Overdoses Per 100,000 Population

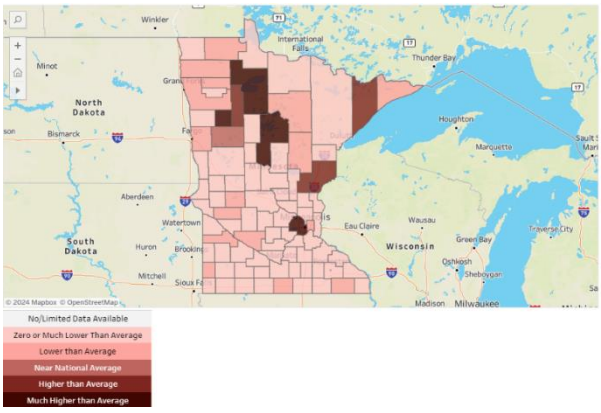
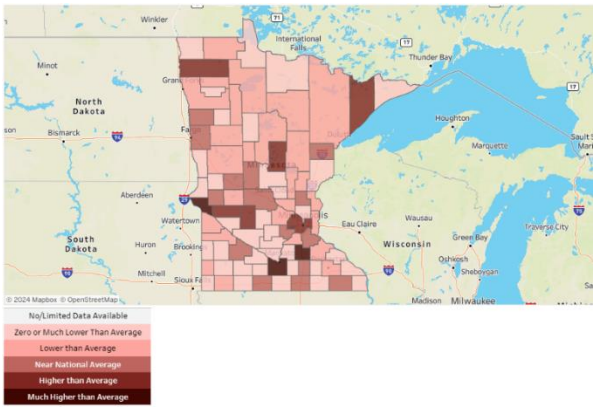


Figure 10. NEMSIS County-level Percent of Patients Receiving Naloxone



Strengths. This dataset is comprehensive. It captures almost all EMS responses in Minnesota and contains valuable information about naloxone administration. Not only is there information about what was administered during the EMS response, but also if there was known administration before the EMS arrived. Staff report this data is collected consistently following each EMS response in the state. It can be used to compare trends in overdose and need for naloxone in different areas.

Limitations. Community organizations that serve people using drugs have told us that many communities do not call an ambulance after deploying naloxone for an overdose reversal, in particular, those in unhoused communities. Therefore, this dataset is valuable, but not representative of all overdoses, and likely underrepresents communities of color and individuals with the most acute needs who may not want to interact with first responders.

Policy Application. Though this dataset has limitations, it is likely our most valuable source for naloxone use. While EMSRB and MDH work diligently to analyze NEMSIS data, there is limited staff with the time and skill to analyze this data, meaning there are ample opportunities for additional analysis and reporting. For instance, Indiana is using state NEMSIS data to create a heat map that shows the concentration of EMS responses where naloxone was administered around the state. It is updated rapidly with some reporting occurring within 24 hours. This could be a useful tool to better understand neighborhoods, counties, or regions where current EMS responses using naloxone has spiked or waned. Such application is more useful in areas with a higher number of reported overdoses, as there is a need to protect privacy by suppressing or aggregating results in areas with a lower number of reported overdoses.

Prescription Monitoring Program (PMP)

Overview. Minnesota's Prescription Monitoring Program (PMP) maintains a secure database of prescription medicine dispensations for all Minnesota Schedule II-V controlled substances, as well as butalbital and gabapentin. Prescription data is submitted to the PMP by pharmacies and prescribers who dispense. Minnesota licensed prescribers, pharmacists, and delegated staff can access this database through a registered PMP account to assist with safe prescribing.

Strengths. The PMP database includes all records of dispensations of prescribed scheduled substances; searches performed by pharmacists, prescribers, or their delegates for individual patients; and a list of PMP account holders. Dispensation records include detailed information about the prescription including date, location, and medication type, plus identifying information about the patient, prescriber, and dispensary. The search and account data contain records of individual searches made by prescribers, pharmacists, or their delegates with identifying information about the individual being searched for, whose account used the search tool, and when the search was performed.

Limitations. PMP data is very sensitive, particularly the prescription data, which contains protected health information (PHI). In addition to the restrictions related to PHI, the PMP dispensation data cannot be retained for longer than 12 months by Minnesota statute. The PMP has shared its prescription and PMP utilization data with the MMB Results Management team several times in the past for specific PMP-related projects, but none

allowed joining the data with any other state datasets. Currently, naloxone is not included on the list of substances to report to the PMP in Minnesota.

Policy Application. Some states, such as Massachusetts, require naloxone to be reported to their PMP. This way, the state can know how many prescriptions of naloxone were dispensed, regardless of insurance coverage or payment type, without the need to purchase private prescription data. Additionally, as discussed above, Virginia uses opioid prescription data in their prioritization model to help identify areas with the most need for naloxone; adopting a model like that in Minnesota would require PMP data on opioid prescriptions

State Unintentional Overdose Reporting System (SUDORS)

Overview. The State Unintentional Drug Overdose Reporting System (SUDORS) was developed by the Centers for Disease Control and Prevention (CDC) to collect information about overdose deaths. The data system is created by incorporating information collected from death certificates, coroner/medical examiner reports, and postmortem toxicology reports. SUDORS contains over 600 variables, including variables about the substances present at the time of death, circumstances and other contextual factors surrounding the death, and presence of potential opportunities for intervention. SUDORS aims to use data to present trends in overdoses (e.g., characteristics of individuals who have experienced a fatal overdose, cause of overdoses, circumstances surrounding overdose) to inform overdose prevention and response efforts. It is important to note, however, that not all overdose deaths meet the SUDORS case definition.

There is information about naloxone administration collected from the coroner/medical examiner reports. Variables include if it is known that naloxone was administered, who administered it (e.g., EMS, someone in the home, a bystander), and how many doses were administered. Because the half-life of naloxone is so short, it is unlikely, but not impossible, for naloxone to show up in the toxicology report. The figures below were taken from the CDC SUDORS Dashboard. Figure 11 is Minnesota SUDORS data from 2022, reporting the statewide percentage of any (not just opioid-involved) overdose fatalities in which naloxone was administered. Figure 12 displays the percentage of individuals who experienced a potential opportunity for an overdose prevention by linkage to another system (such as substance use treatment, release from an institution setting) or if a bystander was present who may have been able to administer naloxone if they had it available and knew how to use it. This helps highlight the critical role these touch points can play in preventing overdose fatalities.

Figure 11. Naloxone Administered Prior to Overdose Deaths in Minnesota in 2022

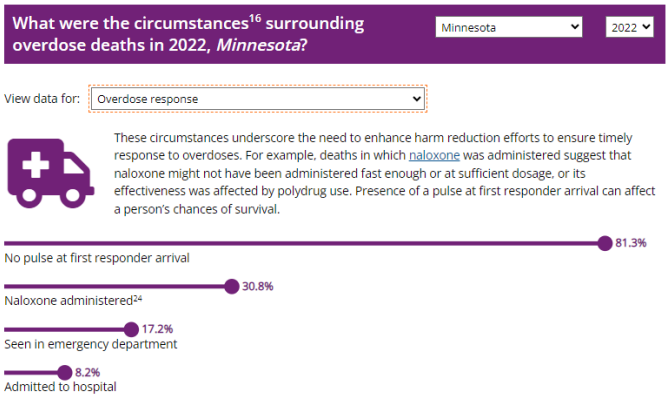
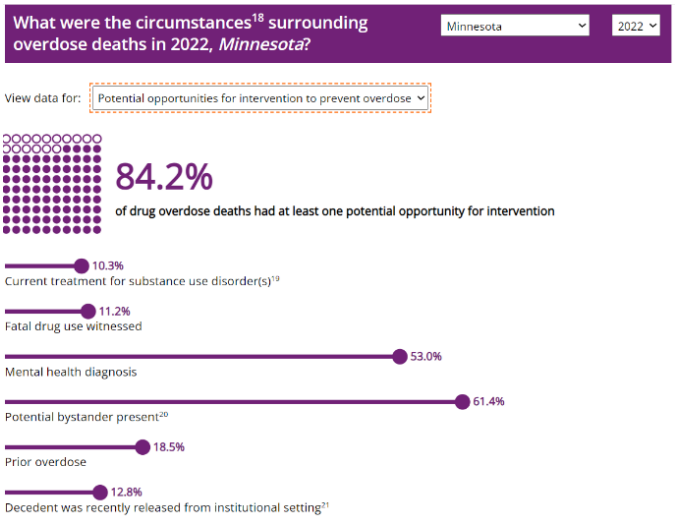


Figure 12. Potential Opportunities for Intervention in Overdose Deaths in Minnesota in 2022



Strengths. According to MDH, SUDORS has captured more than 97% of all overdose deaths occurring in Minnesota since 2019. Additionally, SUDORS includes multiple variables about naloxone administration. This allows for more complex questions about the naloxone administered, such as who administered it and how many doses were administered.

Limitations. On the other hand, while SUDORS may capture almost all of the overdose deaths and include detailed information about naloxone, it is possible that there are cases where naloxone was administered but not documented. If a bystander administers naloxone but is not present or refuses to provide a report, that would remain unknown. Therefore, it is possible that the count of cases where naloxone was administered is underreported.

Policy Application. This is an excellent source of information about the harms of opioid use and also contains valuable information about naloxone use in overdose deaths. This data highlights the many cases where

overdose fatalities occurred without any (known) naloxone administration. It is possible that some of those fatalities could have been prevented had the right conditions been present (e.g., someone was with the individual, access to naloxone, knowledge on how to use the naloxone). Given this, SUDORS has notable applications to improve our practice.

Supplier, Distributor, Prescription, and Over the Counter Purchase Data

Remedy Alliance

Overview. Remedy Alliance is a nonprofit organization that supplies naloxone to harm reduction organizations. To purchase or receive naloxone from Remedy Alliance, harm reduction organizations must work directly with people who use drugs. Remedy Alliance supplies their naloxone at varying price tiers that are dependent on individual harm reduction organizations' needs. For example, organizations that are un- or under-funded to purchase naloxone receive it for free, those with limited funding pay the at-cost price, and those who are able pay above the cost price. This creates a system where harm reduction organizations that cannot afford to purchase naloxone are subsidized by those that can.

Remedy Alliance is a major supplier in Minnesota. From January 1, 2023 to January 15, 2024, Remedy Alliance reports distributing 353,650 doses of naloxone to Minnesota. Of those, about 18% (55,787) were supplied at no cost. In the table below (Table 7), each line represents a deidentified harm reduction program in Minnesota that received naloxone from Remedy Alliance. The table shows how many naloxone orders each program placed with Remedy Alliance and how much the organization spent on naloxone purchases in total during that time period. There were four organizations that ordered naloxone at the no-cost tier. The remaining organizations ranged in amount spent and quantity of orders, with the organization that made the most orders (organization 13) spending almost $200,000 at Remedy Alliance on naloxone during that time. Some state grantees purchase from Remedy Alliance using grant funding, therefore these purchases might also be reflected in the total state-funded naloxone kit numbers reported by grantees.

Table 7. Naloxone Orders from Minnesota Organizations to Remedy Alliance from 1/1/2023-1/15-2024

Minnesota Organization	Total Orders	Total Spent
1	3	$0.00
2	6	$0.00
3	7	$0.00
4	8	$0.00
5	2	$3,720.00
6	1	$7,500.00
7	7	$7,779.41
8	14	$12,797.57
9	9	$42,062.04
10	10	$57,350.00
11	1	$60,007.50
12	10	$152,055.00
13	39	$196,462.50

Strengths. This is an important data source for Minnesota. Remedy Alliance reported that Minnesota is one of the most frequent states to which they supply. Therefore, it is extremely helpful to get a more specific number of naloxone doses they are distributing to the state.

Limitations. We have a very limited view of this data. For privacy reasons, Remedy Alliance does not release more detailed information than what is seen above. It is possible that some of this information is reported to the state if state-awarded grants were used to make the purchase. But particularly for the organizations who are receiving naloxone for free, there is no way to get more detailed information about these purchases. Therefore, though we know generally how much naloxone is coming into the state from Remedy Alliance, we do not know where it is going, when, and in what amount.

Policy Application. This data offers insight into an important source of naloxone for Minnesota that is not well captured in governmental administrative datasets. This provides information about the total amount of naloxone supplied and may also be used to better understand if state funding is meeting the needs of harm reduction organizations. That said, given its privately held nature, it is not data that can be used for timely, targeted governmental action. To our knowledge, no other states or agencies have approached Remedy Alliance about sharing this data in a deidentified, but more granular fashion to help inform saturation efforts.

Steve Rummler HOPE Network (SRHN)

Overview. Steve Rummler HOPE Network (SRHN) is a nonprofit organization founded to help address the effects of the opioid epidemic through overdose prevention, advocacy, and education. SRHN publishes an annual report detailing the amount of naloxone distributed, people trained, and trainings hosted each year. For 2022, SRHN reports distributing 27,188 naloxone kits (79,521 doses). The amount has risen significantly in the last few years. Though the 2023 annual report has not yet been released, SRHN approximates that they distributed 130,000 doses of naloxone that year. The Network also hosted 356 naloxone trainings and trained 6,536 people. Approximately 80% of SRHN's naloxone distribution is to other organizations, with the remaining 20% going directly to individuals. SRHN also partners with organizations through its Naloxone Access Point (NAP) program to establish accessible naloxone pick-up sites around the state (interactive map). SRHN uses state funding to purchase naloxone, therefore these numbers are reflected in the total state-funded naloxone kit numbers.

Strengths. SRHN has a significant impact on naloxone distribution around the entire state. The organization keeps a repository of annual reports here, with naloxone distributed being reported since 2015.

Limitations. For privacy reasons, SRHN does not report detailed information about their naloxone distribution. The state does receive summary data on purchases through state-administered funds and from annual reporting. That said, this type of data does not provide information on geography, type, or timing of distributions, meaning the data cannot be used to inform timely intervention.

Another challenge is because SRHN sometimes sells naloxone, at cost, to community organizations, reporting to the state on kits purchased and distributed may at times be doubled counted. For example, the community organization might report purchasing 100 kits from SRHN, and SRHN (who may also be a grantee on the same type of grant) might report purchasing 100 kits from Remedy Alliance, though those 100 kits will eventually end up with the community organization they will be counted as 200 kits purchased using those grant dollars. That

can mean we think there is more naloxone in the community than there actually is. This is a problem that is not unique to SRHN but is meaningful to note because of that organization's scale.

Policy Application. SRHN data provides insight into an important source of naloxone for Minnesota that is not well captured in governmental administrative datasets. Some of this purchasing is captured in reporting for state-administered grants, while other purchasing is reported in the organization's annual report. This data provides information about the total amount of naloxone distributed and may also be used to better understand if state funding is meeting the needs of harm reduction organizations. That said, given its privately held nature, it is not data that can be used for timely, targeted governmental action. To our knowledge, no agency has approached SRHN about sharing this data in a deidentified, but more granular fashion to help inform saturation efforts.

IQVIA

Overview. IQVIA provides information about prescription naloxone distribution from two streams: 1) naloxone supplied by manufacturers to distributors (e.g., retail pharmacies, mail order pharmacies, long term care facilities, prisons, hospitals, and outpatient medical offices) and 2) naloxone prescriptions filled by individuals. Data about prescriptions dispensed can be disaggregated on the dispensing pharmacy level at the zip code level and on the patient level at the more aggregated zip 3 level (i.e., the first 3 digits of a zip code).

Strengths. IQVIA captures 92-93% of naloxone dispensed and uses statistical methods to project the full market. Data about prescription naloxone dispensed to individuals can include the method individuals used to purchase the naloxone (e.g., Medicaid, private insurance, cash). Because the state already has access to Medicaid claims data, having this information for all prescription naloxone dispensed would ensure prescription data are not duplicated between the two data sources and ultimately provide a more complete picture of prescription naloxone distribution. IQVIA is used by other government agencies, including this study conducted by the CDC examining nationwide pharmacy distribution of naloxone.

Limitations. It is not clear how distribution to an organization like Remedy Alliance would appear in this dataset. If Remedy Alliance has a central warehouse in California, it is possible that all of the naloxone that they order and distribute to harm reduction organizations around the country would show up as being distributed to CA. Given that Remedy Alliance is a major distributor in MN, this could limit the usefulness of this data. In addition, this data needs to be purchased and would have ongoing costs if the data were to be updated regularly (e.g., monthly, quarterly, or annually). We obtained a quote from IQVIA on purchasing supply-level data statewide. The dataset would include counts aggregated by NDC codes, and geography (rural vs metro). The quoted cost to receive this data from July 2021 through June 2024 is $33,000. To receive the same historical data but also have monthly updates through June 2025, the quoted cost is $56,000.

Symphony Health

Overview. Symphony Health provides data about naloxone prescriptions filled by individuals. The organization's data comes primarily from insurance claims, with some information coming directly from the retailers. Symphony Health captures approximately 85% of prescriptions dispensed at retail pharmacies, 70% at mail

order and specialty retailers, and 50% at long-term care facilities. Statistical methods are used to project the full market.

Strengths. Similar to the IQVIA dataset, Symphony Health data can fill gaps to allow us to better understand the naloxone getting into Minnesotans' hands. The strength of this data source is that purchasing it is likely cheaper than the IQVIA data.

Limitations. However, while less expensive, Symphony Health data is also more limited than the IQVIA data. Symphony Health does not capture as much of the market as IQVIA, and, therefore, relies more heavily on their statistical projections. Also, Symphony Health provides less granular information; data can be reported at the pharmacy zip 3 level or the patient zip 3 level. Similar to the IQVIA dataset, an additional limitation of Symphony Health data is that it would need to be purchased.

For-Profit Prescription Data Policy Application. The state already has prescription data for low-income Minnesotans who use MHCP and some information about Medicaid. We are unsure how many Minnesotans obtain naloxone through prescriptions via private health insurance, given its availability through other avenues (community organizations, public health initiatives, etc.), especially for those in active use.

NielsenIQ

Overview. NielsenIQ collects over-the-counter purchasing data through barcode scans. A unique feature of this data is the way that they store data is aggregated through "precision areas." These areas are combined zip codes created to protect store-level information. For example, in areas where there are not many stores, information about sales in those areas may be able to be more directly linked to specific store sales. This leads to very large precision areas in rural areas and smaller precision areas in metro areas. There are 28 precision areas in Minnesota.

Strengths. NielsenIQ reports that their sales information captures 100% of OTC naloxone sales.

Limitations. As can be seen in the nonfatal overdose map above, overdose rates vary greatly in rural Minnesota. Because NielsenIQ's precision areas collapse the entire northwest of the state into one precision area, we might not be able to see how specific areas with great need are accessing OTC naloxone. Additionally, this data is costly. We received a quote from NielsenIQ for OTC naloxone sales from September 2023 with quarterly updates until November 2024. The quoted price was $18,000 and included geographical information using the precision areas described above.

Circana

Overview. Circana, formerly known as IRI, collects OTC purchasing data directly from retailers. The organization captures approximately 80% of naloxone purchases and uses statistical methods to project the rest of the market.

Strengths. Circana data can be reported by store zip code. This is the most granular for-purchase data discussed in this report.

Limitations. While the granularity of this data makes it an ideal candidate for purchase, it comes with several significant limitations. Importantly, Circana only receives data from large retailers, not smaller "mom and pop" stores that are common in Greater Minnesota. They rely on projections to estimate sales in areas where they are missing data. More populated areas are receiving actual counts while more rural areas are receiving projected counts.

For-Profit OTC Data Policy Application. This new avenue of distribution has the potential to shift the naloxone landscape. The drug will become more easily available to some populations (especially those with higher incomes), because it no longer requires a doctor visit or a prescription. However, it may be less available to other populations that cannot afford the cost of OTC naloxone (approximately $45 for two doses). This is especially true for communities that are most frequently using naloxone to reverse overdoses. It will be critical to understand if OTC naloxone is being purchased and if it is impacting prescription sales, which are likely a more affordable but less accessible option.