Journal of Applied Research on Children: Informing Policy for Children at Risk

Volume 11
Issue 2 *Substance Use Prevention in the Era of COVID-19*

Article 2

2020

Information Technology Solutions for Overdose Prevention: Perspectives from the Field

Sarah Ali
VQQ4@cdc.gov

Aliese Alter
University of Baltimore, aalter@wb.hidta.org

Jeff Beeson
University of Baltimore, jbeeson@wb.hidta.org

Information Technology Solutions for Overdose Prevention: Perspectives from the Field

Acknowledgements

N/A let us know if needed for this type of submission

Information Technology Solutions for Overdose Prevention: Perspectives from the Field

Sarah Ali, Aliese Alter, and Jeff Beeson

Abstract:

Drug addiction and misuse have long plagued communities throughout the country, with drug overdose claiming more than 750,000 lives over the past two decades. As the crisis is multifaceted, it requires and beckons all sectors to respond, including the public, private, and nonprofit sectors. This creates unique data sharing challenges. In response to those challenges and recognizing the need for more accurate and timely data, the Washington Baltimore HIDTA created the Overdose Detection Mapping Application Program (ODMAP). This platform provides near real-time suspected overdose surveillance data across jurisdictions to support public health and safety response efforts. This article discusses the utility and functionality of ODMAP, and shares perspectives and practices established from the ODMAP stakeholder community, providing insight about effective information sharing and partnership, the use of ODMAP, and putting data into action.

Introduction

Drug addiction and misuse have long plagued communities throughout the country, with drug overdose claiming more than 750,000 lives over the past two decades. The U.S. Centers for Disease Control and Prevention reported that almost 71,000 people died from drug overdoses in 2019—approximately 195 people each day—with over 50,000 deaths reported to have involved opioids.[1] The increased availability and lethality of opioids, specifically synthetic opioids such as fentanyl, have been the driving factor behind these numbers, which accounted for over 32,000 deaths in 2018.[2] Fentanyl, which is often mixed with heroin or other drugs to increase drug traffickers' profits, is consistently ranked as the primary drug threat in many regions of the country by law enforcement professionals.[3]

The Washington/Baltimore High Intensity Drug Trafficking Area (W/B HIDTA) is administered by the Office of National Drug Control Policy, which coordinates federal, state, local, and tribal law enforcement to reduce drug trafficking and production in the United States. In recognition of the increasing numbers of fatal overdoses, in 2016, W/B HIDTA leadership met with medical researchers, drug court judges, and public health, fire, and emergency medical service (EMS) officials to discuss approaches for addressing Baltimore's opioid crisis. One of the chief

[1] CDC Website – "https://www.cdc.gov/drugoverdose/data/index.html"
[2] HHS website – "https://www.hhs.gov/opioids/about-the-epidemic/index.html"
[3] DEA website - https://www.dea.gov/sites/default/files/2020-01/2019-NDTA-final-01-14-2020_Low_Web-DIR-007-20_2019.pdf

concerns facing not only Baltimore but many other jurisdictions was the inability to capture real-time overdose data. At the time, most jurisdictions only tracked fatal overdoses. No systems were in place to track nonfatal overdoses, data was delayed considerably, and information sharing was significantly limited. Further, there was a recognition that data needed to be made more broadly available in an effort to engage partners who are responsible for the health and welfare of the public. Public health and safety agencies rarely met to share information internally, and typically, only looked to their own jurisdictions.

Recognizing the need for more accurate and timely data, W/B HIDTA staff leveraged their experience creating technology platforms to support data sharing to conceptualize and build a system for capturing suspected overdose data, which resulted in the creation of the Overdose Detection Mapping Application Program (ODMAP). This article discusses the utility and functionality of ODMAP, and shares perspectives and practices established from the ODMAP stakeholder community.

ODMAP Description

The ODMAP platform, launched as a pilot in January 2017 in areas of West Virginia and Maryland, became available nationally later that year. Also that year, the Executive Office of the President established an Interagency Working Group (IWG) to review opportunities to encourage ODMAP use and statewide implementation. Funding from the Office of National Drug Control Policy (ONDCP) and the Bureau of Justice Assistance (BJA) has enabled further development and evolution of the platform since 2017, but key features that allow first responders to report an overdose immediately on scene remain in place. The W/B HIDTA team launched a nationwide outreach strategy, and today the system operates in 49 states, the District of Columbia, and Puerto Rico. It serves over 3300 agencies with over 30,000 users nationwide.

ODMAP provides near real-time suspected overdose surveillance data across jurisdictions to support public health and safety response efforts. First responders either enter data directly through the platform, or employ an Application Program Interface (API) that connects their native record management system, in near real time. Data is transferred to a national map accessible by an approved government institution or agency that serves the needs of public health or safety as its official mandate to better collaborate and respond to overdose incidents.

Due to the diverse and segmented nature of the public health and public safety sectors, coordination and collaboration are imperative prerequisites in order to harness information technology (IT) solutions for addressing the epidemic. Data governance, data sharing, and policy are not exhilarating topics to discuss when coordinating a multidisciplinary team; however, they are essential for establishing a framework of trust and for outlining intentions for data usage. Each participating sector is accustomed to operating within its familiar boundaries; of particular relevance are the Health Insurance Portability and Accountability Act (HIPAA) regulations and the law enforcement sensitive classification. Careful and intentional data sharing is imperative to

share data within legal boundaries effectively, and a solid foundation of understanding data use among partners is fundamental. The following features within the ODMAP platform have been implemented to support collaboration and thoughtful data sharing:

1. Participation Agreements: Each participating agency signs a participation agreement outlining its roles and responsibilities and its position as data owner.
2. Policies and Procedures: Outline security, access, data sharing and dissemination, and operational policies.[4]
3. Restricted Zoom: Zoom function is restricted to a zoom level ID: 15,[5] meaning, when the map is fully zoomed in, each centimeter on the map corresponds to 180.55 meters, or approximately 600 feet, permitting approved users to identify the general area of the incident; however, actual buildings are not identifiable.
4. Not a System of Record: ODMAP is not a system of record. It is a national syndromic surveillance system for suspected fatal and nonfatal overdoses in near real-time, to facilitate a real-time response. As a result, users are aware of its intended use and consult with partners before reporting.

The system does not record personally identifiable information on the victim, but it does provide first responders and public health practitioners with real-time information to get resources into the community to save lives. ODMAP only requires the submission of four fields, which assists with supporting standardization of data and accounts for covered entities and HIPAA.[6] The required fields are:

1. Location
2. Date/time
3. Fatality status
4. Quantity of naloxone administration

As additional fields offer the capacity to capture supplemental data to strengthen resource allocation, evaluation, and overall community awareness, ODMAP captures nine other optional fields:

1. Case number
2. Age
3. Gender
4. Primary suspected drug
5. Additional suspected drug(s)
6. If the victim was taken to the hospital
7. If the incident was part of a multiple overdose victim incident
8. If the overdose had a motor vehicle involved
9. Who administered naloxone

[4] http://odmap.org/Content/docs/training/general-info/ODMAP-Policies-and-Procedures.pdf
[5] http://odmap.org/Content/docs/training/featured/ODMAP-Data-Privacy-Guidance-Document.pdf
[6] http://odmap.org/Content/docs/training/featured/ODMAP-Data-Privacy-Guidance-Document.pdf

Many jurisdictions and states have elected to use the ODMAP API to connect a native database directly to the system to provide a visualization of suspected overdose data on a national map quickly and efficiently for all agencies who have access to ODMAP. This minimizes the data entry burden many agencies face and allows public health and safety agencies to look within and beyond their jurisdictions to maximize limited resources.

ODMAP Adoption

Legislation has been an effective tool for approaching statewide adoption of overdose reporting. In recognition of the growing need for real-time overdose data, the Connecticut Department of Public Health, in partnership with the Connecticut Poison Control Center (CPCC), created the Statewide Opioid Reporting Directive (SWORD).[7] In accordance with statewide legislation Public Act No. 18-166, Sec. 5,[8] all Connecticut-certified and -licensed EMS providers are required to report suspected opioid overdoses to CPCC. A subset of data is then entered by CPCC specialists into ODMAP to be made more broadly available. As ODMAP is available to those entities of the government acting in the interest of public health and public safety, it provides health departments and districts the ability to focus limited resources using additional, near real-time data about the location of overdoses.

Education and communication are valuable components for continued successful program management. Prior to Connecticut's statewide implementation, this reporting mechanism was piloted for a full year in the northern part of Hartford. It was then formally rolled out in a phased manner beginning in April 2019 and with statewide adoption beginning in June 2019.[9] The Connecticut Department of Public Health created online and in-person education opportunities for EMS and public health to improve awareness of the SWORD initiative. They additionally produce a public-facing monthly newsletter, which provides regular analysis on statewide observations.

ODMAP as a Public Health Prevention Tool

As the crisis is multifaceted, it requires and beckons all sectors to respond, including the public, private, and nonprofit sectors. Of course, this poses unique data management needs.

ODMAP can be leveraged as a tool for implementing more targeted response efforts within the context of locally available resources. Connecticut's city and regional task forces have looked to ODMAP for the data needed to drive a number of response efforts. The data has influenced the prioritization of zip codes selected for an informational campaign, with mailers disseminated at the household level, to include references to state resources such as Change the Script,[10] LiveLOUD,[11] and the Naloxone + Overdose Response App (NORA).[12] Each resource focuses on

[7] https://portal.ct.gov/DPH/Emergency-Medical-Services/EMS/OEMS---SWORD
[8] https://www.cga.ct.gov/2018/act/Pa/pdf/2018PA-00166-R00SB-00483-PA.PDF
[9] https://portal.ct.gov/-/media/Departments-and-Agencies/DPH/dph/ems/pdf/Communication_Statements/2019/2019_03_15_OEMS_COMMS_19-03_WithSWORDSfinal.pdf
[10] https://www.drugfreect.org/prevention-and-intervention/change-the-script-campaign/
[11] https://liveloud.org/
[12] https://egov.ct.gov/norasaves/#/HomePage

different types of connection and education, spanning safe disposal of unwanted prescription medications, harm reduction and syringe service programs, treatment access, support groups, naloxone use and availability, and support services.

Different types of alerts can be set within ODMAP as a mechanism for notifying individuals or teams of overdose changes. ODMAP has a spike alert feature hat notifies stakeholders when suspected overdoses have met or exceeded a predetermined threshold within a 24-hour time period. Nationally, many ODMAP partners are incorporating the spike alert feature into their Spike Response Frameworks[13] to establish response strategies. ODMAP also has another alert, called an overdose alert, that allows agencies to be notified every time there is a fatal or nonfatal suspected overdose in their county, which supports near real-time surveillance efforts. Further, the ODMAP system has the ability to communicate across regions when overdose spikes occur in regions throughout the country, and to provide analytical solutions to officials to promote response and life-saving practices within the community.

Notably, spike alerts triggered in ODMAP have served as the backbone for deploying emergency response plans. In northwestern Connecticut, the Litchfield County Opioid Task Force (LCOTF) is comprised of the Torrington Area Health District, the McCall Center for Behavioral Health, Charlotte Hungerford Hospital, Greenwoods Counseling Referrals, first responders, and other community partners. The LCOTF designed a three-level response plan to deploy resources and notify individuals, officials, and media accordingly. The LCOTF comprehensively embraces a variety of strategies, based on what is available locally within its area of responsibility.

A “rover” is a toolbox on wheels that can be brought to select locations as a way of delivering harm reduction supplies and multilingual resource cards, depending on identified needs. In the event of an overdose spike, these rovers may be deployed to an area identified as a hot spot with an increased number of overdoses. A response team is additionally able to provide community outreach and post-overdose outreach with a multidisciplinary team, including members from public health and public safety. Finally, a text-messaging platform is available for individuals to receive information about risks and resources, encouraging harm reduction strategies and providing a connection to support services.

Response strategies are dependent on effective information sharing and partnership, the use of ODMAP, and putting data into action. Using the alerts and information available in ODMAP, many communities have developed innovative methods to further information sharing beyond ODMAP. For example, Erie County, New York, was one of the first communities to forge an integrative public health and public safety partnership utilizing ODMAP as a centralized platform for sharing data across disciplines. When the police department responds to a suspected overdose in Erie County, they enter it into ODMAP. The public health department monitors ODMAP daily for new overdose submissions. When a new overdose is identified, the health department contacts the police department for the police report containing the overdose survivor’s information. Once received, a peer recovery coach contacts the survivor within 24 hours to discuss treatment modalities.[14]

[13] http://odmap.org/Content/docs/ODMap-Overdose-Response-Framework-2018-3.29.18.pdf
[14] http://odmap.org/Cont

The data contained within ODMAP can originate from different sources, such as emergency departments, emergency medical services, and syringe service providers. Many of these data sources can inform prevention and response efforts. However, while ODMAP does not supplant the need for surveillance, it serves as a tool to facilitate the sharing of real-time data among decision makers.

ODMAP Limitations

ODMAP's flexibility and adaptability also present limitations. For example, ODMAP defers to state and local agencies to define "suspected overdose," creating variations in data definitions that may impact data consistency across jurisdictional boundaries. Additionally, participation varies across organizations and geographic regions. Some participating regions either fail to report or are inconsistent in reporting suspected overdoses to ODMAP. It is therefore advised that data from ODMAP be interpreted within the context of what is known about how the data is collected and recorded, and one should proceed with caution when viewing data from other jurisdictions without understanding their definitions and methodology.

Conclusion

Sharing data across sectors can be intimidating. Sharing data without knowing how it will be interpreted or utilized can limit agencies' willingness to provide it in the first place. Establishing partnerships assists not only with program governance and outlining the constructs of data use, but also with the ability to put data into action. Multidisciplinary teams enable communities to capitalize on various types of expertise, while also empowering relationships and promoting a comprehensive response. In light of the reallocation of resources resulting from COVID-19 and evidence of increasing overdoses in many parts of the United States, data provided by ODMAP offers unparalleled, near real-time opportunities for informed decision-making.

References

1. Opioid overdose. Centers for Disease Control and Prevention Web site. https://www.cdc.gov/drugoverdose/data/index.html. Accessed January 28, 2021.

2. What is the U.S. opioid epidemic? US Dept of Health and Human Services Web site. https://www.hhs.gov/opioids/about-the-epidemic/index.html. Accessed January 28 2021.

3. Drug Enforcement Administration. 2019 National drug threat assessment. https://www.dea.gov/sites/default/files/2020-01/2019-NDTA-final-01-14-2020_Low_Web-DIR-007-20_2019.pdf. Published December 2019. Accessed January 28, 2021.

4. Operating policies and procedures. Overdose Detection Mapping Application Program (ODMAP) Web site. http://odmap.org/Content/docs/training/general-info/ODMAP-Policies-and-Procedures.pdf. Revised November 2019. Accessed January 28, 2021.

5. Legislative Analysis and Public Policy Association. ODMAP and protected health information under HIPAA: guidance document. http://odmap.org/Content/docs/training/featured/ODMAP-Data-Privacy-Guidance-Document.pdf. Published March 2020. Accessed January 28, 2021.

6. Connecticut Statewide Opioid Reporting Directive (SWORD). Connecticut State Department of Public Health Web site. https://portal.ct.gov/DPH/Emergency-Medical-Services/EMS/OEMS--SWORD. Accessed January 28, 2021.

7. An act concerning the prevention and treatment of opioid dependency and opioid overdoses in the state. Substitute SB 483. Public Act 18-166 (CT 2018). https://www.cga.ct.gov/2018/act/Pa/pdf/2018PA-00166-R00SB-00483-PA.PDF. Accessed January 28, 2021.

8. Rafaella Coler; State of Connecticut Department of Public Health. Rollout of the CT EMS Statewide Opioid Reporting Directive (SWORD). https://portal.ct.gov/-/media/Departments-and-Agencies/DPH/dph/ems/pdf/Communication_Statements/2019/2019_03_15_OEMS_COMMS_19-03_WithSWORDSfinal.pdf. Issued March 18, 2019. Accessed January 28, 2021.

9. Change the Script campaign. Drugfreect.org Web site. https://www.drugfreect.org/prevention-and-intervention/change-the-script-campaign/. Accessed January 28, 2021.

10. For opioid use disorder, no more shame. LiveLOUD Web site. https://liveloud.org/. Accessed January 28, 2021.

11. NORA saves. Connecticut Department of Health website. https://egov.ct.gov/norasaves/#/HomePag. Accessed January 28, 2021.

12. Overdose spike response framework: a companion guide for ODMAP stakeholders. Overdose Detection Mapping Application Program (ODMAP) Web site. http://odmap.org/Content/docs/ODMap-Overdose-Response-Framework-2018-3.29.18.pdf. Published January 2018. Accessed January 28, 2021.

13. Training manual. Overdose Detection Mapping Application Program (ODMAP) Web site. http://odmap.org/Content/docs/training/general-info/ODMAP-Training-Manual.pdf. Published February 2020. Accessed January 28, 2021.