Drug Supply Data Communications Toolkit

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Toolkit Overview

This toolkit is intended to be used as a complete resource, with information and recommendations presented throughout the document. For readers new to community-based drug checking and drug supply navigation, the toolkit presents a detailed overview of many of the components and partnerships necessary for meaningful, sustainable programs, as well as links to other guidance materials and training resources. For existing programs or partnerships seeking to refine or expand communications, health education, or community engagement activities, the toolkit provides actionable recommendations and sharable strategies for public health stakeholders.

Executive Summary

Introduction to toolkit and sharable summary of six key take-aways for effective communication.

Drug Supply Data 101

Establishes public health data sources and rationale for collecting and leveraging information about the drug supply for individual and community health.

Community-Based Drug Checking Services

Reviews methods of community-based drug checking, program development guidance, and ethical considerations for collecting and using related data.

Other Sources of Drug Supply Data

Evaluates additional data sources at local, state, and national levels—including public health, clinical, and law enforcement data—for utility and relevance in drug supply navigation and health education.

Audiences

Provides general considerations and recommendations for tailoring communications for key audiences, including people who use drugs, harm reduction professionals, healthcare providers, and the public.

Drug Supply Advisory Councils

Outlines functions, infrastructure, and expertise required for advisory councils to support data collection, interpretation, and dissemination of meaningful health information.

When to Communicate

Offers decision-making guidance for choosing settings, formats, and timely opportunities to share drug supply information, including when to issue public health alerts.

What to Communicate

Presents core messaging components and highest-priority information, including sample template, according to people who use drugs and other key audiences of drug supply communications.

How to Communicate

Compares the goals, strengths, and drawbacks of different styles of communication, with a focus on one-on-one interactions with trusted messengers.

Toolkit Overview

Educate and Engage

Identifies potential opportunities to leverage information about the drug supply to support prevention and response activities, including through strategic partnerships.

Appendix 1: Methods

Additional information about qualitative data collection methods used and subject matter experts represented in the development of the toolkit and its recommendations.

Appendix 2: Examples of Print and Electronic Drug Supply Communications

Annotated communications examples from harm reduction organizations and public health agencies identifying best practices.

This toolkit is complemented by Recommendations for Drug Checking Communications, developed by Reframe Health and Justice through a Learning Exchange cohort with people who use drugs, which can be found here.

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Executive Summary

This document is written for public health departments, community-based organizations, and state, local, and Tribal leaders who are interested in learning more about their local drug supply, including how to collect, manage, and disseminate information about the drug supply to local communities and service providers.

This document was developed with the help of numerous experts, including drug checking technicians, drug supply data analysts, leaders of community-based organizations that serve people who use drugs, and many people who use drugs themselves. The guidance offered here reflects that collective wisdom, highlighting established and emergent best practices that can be adapted for any community, region, or setting.

While there are many ethical, methodological, and political concerns that each community must take into consideration, the key take-aways from this document can be summarized as follows:

DATA IS POWER. The public health benefits of reliable, accessible information about the local drug supply are enormous. Drug supply advisory councils, composed of local experts specializing in local substance use practices, the local drug supply composition, drug checking services, and drug toxicology, can offer essential guidance for drug supply data collection, interpretation, and messaging that is both responsible and effective. Further, adhering to the principles of data sovereignty (the rights of individuals and communities to control their own data), especially when partnerships are built between Tribal and non-Tribal entities, will protect all members of the community from the potential consequences of misuse.

TRUST IS ESSENTIAL. People who use drugs have learned to expect shame, mistreatment, and even criminal repercussions when interacting with institutions and service providers. Building trust with people who use drugs is a foundational step for collecting and communicating accurate drug supply data. Without it, people at highest risk of overdose may be the least likely to put their faith in the drug supply communication efforts that might save their lives. In practical terms, this means that drug supply monitoring goals like robust data collection, dashboard development, and public communication strategies may need to slow down or even pause until trusted messengers are established and identified.

Executive Summary

FACE TO FACE INTERACTIONS MATTER MOST. Numerous strategies for drug supply communication have been developed: newsletters, electronic alerts, websites, dashboards. But one-on-one interactions between people who use drugs and organizations providing community-based drug checking services remains the most powerful (and most preferred) mode of drug supply communication among people who use drugs.

OTHER DATA SOURCES exist that can be leveraged to improve understanding of the local drug supply including: law enforcement seizure data, post-mortem toxicology data, emergency department admissions, 911 calls for service and EMS data, and urine toxicology from hospitals and other clinical settings. All of these data sources have limitations, but each can contribute a piece of the larger picture.

COMMUNITY-BASED DRUG CHECKING PROGRAMS are the most important and actionable sources of drug supply data. They can gain incredible insight into the drug samples brought to them for testing including what the drug was sold as, how it felt, and what intentions the person seeking services might have for the drug. No other source of drug supply data can reliably produce such granular, timely, or locally meaningful drug supply information, which is necessary for accurate and effective drug supply messaging.

EFFECTIVE DRUG SUPPLY MESSAGING may vary according to the intended audience (generally, these are people who use drugs, healthcare providers and other professionals who serve people who use drugs, and the general public). However, nearly all effective drug supply messaging will contain secondary confirmation (often from lab-based drug sample analysis), the limitations of the technology used, contextual information about the drug samples described (including what they were sold as, how they feel, and how they affect the body), tailored harm reduction and/or overdose prevention strategies, and a clear indication of when and where the communication was issued.

Data 101

Drug supply monitoring is the term most often used to describe the identification of novel substances and trends in the local drug supply. Drug supply data may include findings from community-based drug checking programs, post-mortem toxicology, law enforcement drug seizures, and numerous other sources (see Community-Based Drug Checking Services and Other Sources of Drug Supply Data, below).

Drug supply data can be used to estimate the relative prevalence of certain substances in the local drug supply, such as the prevalence of fentanyl in opioid supplies,[1–6] of xylazine in fentanyl supplies[1,4,7] and of benzodiazepines in illicit opioids and pressed pills.[4,7,10,11] With the use of certain advanced technologies, drug supply data can even estimate the relative concentration (percent by weight) of substances like fentanyl[3,5,11–13] or xylazine[7] in local opioid samples, as well as how those relative concentrations may differ across geographies or change over time.

THE UTILITY OF DRUG SUPPLY DATA FOR INDIVIDUAL AND COMMUNITY HEALTH is significant, and our knowledge about that utility is still growing. Drug supply data can help correct misinformation, which can, in turn, reduce stigma, fear, and misguided responses to substance use. Drug supply data can also reveal variations in available drug products, enabling tailored responses to different drug exposures including (but not limited to) overdose management, withdrawal management, and treatment for substance use disorder.

Data 101

The Public Health Benefits of Drug Supply Data

- Improve the health and safety of people who use drugs through drug checking.
- Strengthen trust and engagement between people who use drugs and local harm reduction programs by creating new opportunities for trust-building and education through drug checking.
- Attract new populations to harm reduction, healthcare, and prevention programs by offering drug checking, a service many people want to access.
- Maintain up-to-date knowledge of how common substances shape the presentation of overdose and best practices for overdose response.
- Help emergency departments know what tools are needed to screen patients for likely substance exposures that could affect clinical care.
- Inform local healthcare facilities about current best practices for managing withdrawal symptoms associated with substances in the local drug supply.
- Improve protocols for initiation onto medication for opioid use disorders to account for likely substance exposures and the side effects (including withdrawal symptoms) that those exposures could produce.
- Educate people who use drugs and health professionals who serve people who use drugs about the new and established harm reduction practices based on current knowledge of the local drug supply.

For people who use drugs, drug supply data can improve numerous health and psycho-social outcomes. In the words of one drug checking expert, drug supply data **"allows people to have control and consent over what they're putting in their body."** If they learn that something unexpected is in their drug sample, people who use drugs may decide to use less of the drug;[14–21] decide not to use the drug at all;[14,16,18,19] change how they intend to consume a drug (i.e. smoke or swallow instead of inject);[17] educate other community members about their results;[14,18] discuss the results with the person who sold them the drugs;[18] or avoid using that supplier in the future.[14] People who use drugs can also discuss their concerns about the drug supply with harm reduction specialists, creating opportunities for prevention education, linkage with resources, and entry into related health services.

> **"It really helps. We need to know what we're doing. I need to know what's going in my body."**
>
> **"As a recreational user working a moderation model this helps me stay alert to what's in what I'm taking. I feel it will help me stay in moderation if the substance contains stuff that I didn't know was in it."**
>
> **"At the end of the day, I want to know what I'm doing."**
>
> **"It would help everybody an awful lot."**
>
> **"It will keep us alive."**
>
> DRUG CHECKING SERVICE USERS

Community-Based Drug Checking Services

Drug checking is the chemical analysis of a substance that someone is planning to use (or has used) to gain insight about the contents.

Immunoassay strips, such as fentanyl test strips or xylazine test strips are common drug checking tools. More advanced technologies include commercially available spectroscopy devices, such as paper spray mass spectrometry or Fourier-transform infrared spectrometry (FTIR), and advanced laboratory mass spectrometers, such as gas chromatography or liquid chromatography mass spectrometry (GS-MS and LC-MS, respectively). None of these technologies provide a perfect analysis of any drug sample on its own. Each technology has its own strengths and limitations.

Community-Based Drug Checking Services

Drug checking technologies

IMMUNOASSAY TEST STRIPS. These test strips indicate the presence (+) or absence (-) of a particular substance. Many different test strips are commercially available, each one designed to test for a specific drug or drug class (i.e. fentanyl, xylazine, benzodiazepines, etc.).

REAGENT KITS. Reagent kits use chemicals with color-changing reactions to unknown drugs to determine whether a particular substance is present.[22,23]

PORTABLE SPECTROMETRY/SPECTROSCOPY DEVICES. Several different kinds of portable technologies are used to analyze drug samples in community settings. These include (but are not limited to): Fourier-transform infrared (FTIR) spectroscopy devices; Raman spectroscopy devices; high pressure mass spectrometry (HPMS) devices; and others.[24,25]

LAB-BASED SPECTROMETRY/SPECTROSCOPY DEVICES. Sometimes called "secondary testing" when used in conjunction with community-based drug checking services, lab-based analysis can offer gold-standard chemical analysis of drug samples such as gas chromatography mass spectrometry (GCMS), liquid chromatography mass spectrometry (LCMS), and other technologies.[26]

COMMUNITY-BASED DRUG CHECKING is the delivery of drug checking services for community members at the point of care.[3,5,8,10–13,27–29] This means that a service user will provide a drug sample to a trained drug checking technician, who will be able to analyze the substance and share their results with the service user within a few minutes.

> **"That's what people need, so they know before they do [the drug]. That would help a lot of people stop ODing."**
>
> **DRUG CHECKING SERVICE USER**

While there is no one, true definition of the term, community-based drug checking generally goes above and beyond immunoassay strip distribution to include the real-time analysis of samples with test strips, reagents, and/or spectroscopy with interpretation returned to the participant right away by a trained technician. The technician may also suggest sending some of the drug sample to a partnering lab for additional analysis. This can provide the technician and the service user with more information, but it may take several weeks to receive those lab results.

> **"As a recreational user working a moderation model this helps me stay alert to what's in what I'm taking. I feel it will help me stay in moderation if the substance contains stuff that I didn't know was in it."**
>
> **DRUG CHECKING SERVICE USER**

Community-Based Drug Checking Services

DRUG SUPPLY DATA COLLECTED THROUGH COMMUNITY-BASED DRUG CHECKING can have important implications for public health.

- Drug checking is an evidence-based overdose prevention strategy.[30–33] Point-of-care drug checking empowers people who use drugs to make safer choices and creates valuable opportunities for harm reduction education and engagement.
- Community-based drug checking programs can document qualitative information about illicit substances being analyzed, including what those substances were sold as and reports from service users about the quality, side effects, or use experience from a particular sample.
- These unique features of community-based drug checking programs make them especially good at identifying novel substances in the illicit drug supply. Community-based drug checking programs are responsible for reporting and sounding the first alarms about risky substances like xylazine[34] and BTMPS[35] in local drug supplies.

IMPLEMENTING COMMUNITY-BASED DRUG CHECKING SERVICES requires significant investment. Start-up expenses include purchasing advanced analytical devices (the cost of the FTIR model most often used for community-based drug checking in the United States exceeds $40,000) and intensive training for new drug checking technicians. Ongoing expenses include the costs of staff time on the device, lab-based analysis at partnering labs (often charged at a flat cost per sample submitted), and ongoing technical assistance.

Many toolkits and online resources have been created to help guide communities through the process of establishing community-based drug checking services. Examples include:

- Remedy Alliance for the People's Drug Checking Implementation Workbook
- NYC Health's Setting Up a Drug Checking Program: A Comprehensive Guide to Implementation
- British Columbia Center for Substance Use's Drug Checking Implementation Guide
- University of Victoria's Visioning Towards a Decolonized, Indigenous-Centered Service Model for Drug Checking

ETHICAL CONCERNS WITH DATA COLLECTION IN COMMUNITY-BASED DRUG CHECKING will vary across community contexts. However, early pioneers of community-based drug checking have developed several best practices that can be applied in nearly any setting.

Drug checking data only describes drug samples. Data about the people who use drug checking services should not be collected at the point of care or linked to drug supply data in any way. Collecting this data puts service users at risk of criminal consequences, interpersonal conflict in the community, loss of trust with essential service providers, and more.

In general, experts advise community-based drug checking programs to collect as little data as possible. This means that new metrics for drug checking programs should only be established after the need for such a metric becomes apparent through service delivery and should only be collected after programs determine how that metric is analytically useful.

Community-Based Drug Checking Services

Legal concerns about drug checking directly affect data collation as well. In some states, drug checking technologies may not be explicitly legalized, or possession of drug samples brought to drug checking may not be explicitly decriminalized.[36] In some areas, service users may have to cross state lines to reach the nearest harm reduction organization, increasing the risks of federal criminal consequences. Many drug checking technicians report concerns from service users that the drug samples they submit for analysis will be used against them in a criminal investigation. Some report service users asking them if they, the drug checking technicians, are police officers themselves. Finally, many drug checking service users reported prior negative experiences with law enforcement, including police harassment and criminal charges or convictions that deeply shaped their perceptions of how they would be treated in the present.

> **"I do have a previous possession record that has taken me over 10 years to finally separate myself from. Having even the slightest residue on me is always a risk."**
>
> **"Some [police] officers know some people and they will stop you on a dime."**
>
> **"We know we're doing an experiment [when checking drugs], but the police won't see it that way."**
>
> **"If they're gonna catch people [participating in drug checking], it [drug checking] won't work."**
>
> **"They'll lock us up for anything."**
>
> DRUG CHECKING SERVICE USERS

Data sovereignty, the practice(s) of ensuring that communities maintain ownership and control over the data that they create, is another important ethical and political consideration for community-based drug checking programs. In particular, preserving First Nations' right to sole possession of their data and control whether, how, and to whom such data is shared is of the utmost importance.[37]

One prominent model, developed by the First Nations Information Governance Centre in Canada, is the First Nations Principles of OCAP®.[38] The acronym, OCAP®, stands for Ownership, Control, Access, and Possession, four principles to uphold to ensure that Indigenous communities and Tribal Nations remain in control of the knowledge they produce. In practice, many community-based drug checking programs (not only those serving Tribal communities) have established memoranda of understanding and other legal agreements with partnering state institutions, universities, and data repositories that ensure local actors maintain full legal ownership of and control over their data even if they make use of third-party systems for data collection, storage, and analysis.

Rural areas may be geographically large, but their communities can still be small and tight –places where "everybody knows everybody." Smaller staff numbers at local agencies often make these institutions easier to navigate and conversations with leadership easier to pursue, which can, in turn, foster fruitful collaboration between community-based drug checking programs and local services agencies, healthcare providers, jails, and hospitals through trusting personal relationships—not just formal inter-agency agreements.

Community-Based Drug Checking Services

At the same time, it may be impossible for any data to be truly anonymous in a region where everyone knows everyone. Consequently, community-based drug checking programs operating in rural areas may need to significantly restrict the data they collect to protect service users from stigma, fear, and other negative community responses.

Building trust with drug checking service users can take a very long time—sometimes years. People who use drugs are often met with stigma, judgement, and even mistreatment at the hands of many different professionals. They may be reluctant to use drug checking services or may be reluctant to provide reliable information about their drug sample if they do. However, experts consistently report that the willingness of service users to open up to drug checking technicians, and the quality of drug supply data that programs can subsequently collect, will steadily improve as trust with services users grows.

To earn this trust, communities may need to direct local public health funding towards community-led drug checking programs to create a space where trust can develop. They may need to restrict what data is collected to prioritize the privacy and safety concerns of service users over data quality. They also may need to refuse to disseminate disaggregated data and even exclude certain findings from aggregated data if doing so would pose new risks to individuals or to people who use drugs more generally.[39] This is a slow process, but the time it takes is worth the rewards it returns.

Other Sources of Drug Supply Data

Community-based, point-of-care drug checking programs typically produce the most current, reliable, and actionable drug supply data, the quality of which will only improve as community uptake of those services grows.[3,5,8,10–13,27–29] Nevertheless, many other existing data sources can, with limitations, provide useful insights about the local drug supply and inform drug supply communication strategies.

Other Sources of Drug Supply Data

OTHER DRUG SUPPLY DATA SOURCES

Data type	Data description	May provide a robust, granular view of the local drug supply, with serious limitations	May identify novel substances in the drug supply, with appropriate lab analysis	May enable rapid identification of atypical OD events and OD clusters	Additional benefits	Limitations
Point-of-care, community-based drug checking services	• Data collected by harm reduction organizations analyzing drug samples in point-of-care settings using portable advanced technology (i.e. FTIR or similar device) with lab-based confirmatory testing.	**YES**	**YES**	**YES**	• Provides insight into drug trends over time • This is the preferred communication strategy among people who use drugs.	• Biased sampling (limited to drug checking participants)
Remote and/or mail-in drug checking services and drug checking data repositories	• Data about drug samples submitted to nation-wide drug analysis services (i.e. DrugsData.org, NIST, CFSRE, the UNC Street Drugs Data Lab) and/or data repositories (i.e. StreetCheck database).	**YES**	**YES**	**YES**	• Provides insight into drug trends over time. • May enable quantitative testing, depending on technological capacities.	• Delay in receiving drug sample analysis results • Biased sampling (limited to drug checking participants)
Law enforcement seizures	• Drug samples seized by law enforcement and obtained through controlled purchases. • Police reports detailing date, location, and other contextual information about these samples.	**YES**	**YES**	No	• Provides insight into drug trends over time.	• Biased sampling (limited to persons who experience police contact) • Without secondary lab analysis of drug samples, this data is subject to serious error.

Other Sources of Drug Supply Data

OTHER DRUG SUPPLY DATA SOURCES cont.

Data type	Data description	May provide a robust, granular view of the local drug supply, with serious limitations	May identify novel substances in the drug supply, with appropriate lab analysis	May enable rapid identification of atypical OD events and OD clusters	Additional benefits	Limitations
Post-mortem toxicology	• Illicit and prescription drug exposures identified in post-mortem analysis fatal overdose events, confirmed and suspected.	No	**YES**	**YES**	• Triangulation against other robust drug supply data sources can provide some insight into the relative risk of OD associated with certain substances or OD response strategies.	• Biased sampling (limited to fatalities) • Cannot provide insight about individual drug products • Utility is limited by state or municipal technological capacity.
Emergency department admissions	• Primary complaints of OD or other substance-use related health concerns. • Syndromic data on new or unexpected presentations suspected to be related to the illicit drug supply	No	No	**YES**	• Can improve recognition and clinical management protocols for common or emergent drug exposures.	• Biased sampling (limited to persons admitted to ED). • EDs may not test for some or any drugs
911, EMS, and community paramedic data	• Non-fatal OD events with EMS response • Buprenorphine initiations and other substance use-related contacts by community paramedics	No	No	**YES**	• May help improve protocols for MOUD initiation. • May be triangulated with other drug supply and OD data sources to monitor OD presentation and effective response strategies.	• Biased sampling (limited to persons receiving emergency medical services, often following 911 calls).

Other Sources of Drug Supply Data

OTHER DRUG SUPPLY DATA SOURCES cont.

Data type	Data description	May provide a robust, granular view of the local drug supply, with serious limitations	May identify novel substances in the drug supply, with appropriate lab analysis	May enable rapid identification of atypical OD events and OD clusters	Additional benefits	Limitations
Hospital and clinical (urine) toxicology	• Emergency department toxicology for overdose and substance-use related complaints. • Urine toxicology from general hospital admissions and/or from larger health systems (i.e., opioid treatment programs, federally qualified health centers, third party clinical laboratories, etc.)	No	No	No	• Triangulation with other drug supply data sources may inform the expansion of substances included in hospital-based toxicology testing	• Biased sampling (limited to hospital admissions) • Cannot provide insight about individual drug products • Hospitals may not test some or any drugs

STATE AND LOCAL DATA SOURCES provide important complements to community-based drug checking data, enabling more accurate interpretation and messaging of that data in certain cases.[6,9] In the absence of meaningful drug checking services, these other sources can partially fill that information gap if their strengths and limitations are properly understood.

Useful state and local data sources identified in peer-reviewed literature and by drug checking experts include:

- Law enforcement seizure data;
- Emergency department admissions data;
- Hospital and clinical toxicology data;
- 911 and EMS data;
- Medical examiner and post-mortem toxicology data;
- The results of drug sample analysis made available online by laboratories offering remote/mail-in drug checking services, such as the University of North Carolina's **Street Drugs Analysis Lab,** and by drug checking data repositories, such as Brandeis University's **Streetcheck**.[2,6,9,40,41]

Most drug checking experts identified law enforcement seizure data as the most important source of drug supply data, second only to community-based drug checking. Law enforcement seizure data is inherently biased, as these drug seizures only occur in the context of police interaction. The chances of police interaction resulting in a drug seizure is directly shaped by a variety of individual, economic, and demographic factors, which makes the data far from representative.[42] Nevertheless,

Other Sources of Drug Supply Data

law enforcement seizure data often links individual drug samples with a day and location where that seizure was collected,[9,43] offering a potentially rich and widely underutilized window into certain geographic and time trends in the local drug supply.

Some law enforcement seizure data is already compiled by state agencies. That data may be limited by the testing abilities available to each law enforcement agency or may simply consist of officer intuition about what was seized. Nevertheless, any available data can contribute to improved awareness of the local drug supply when shared directly with local drug supply advisory councils and/or community-based drug checking programs for interpretation. In regions where local law enforcement does not report to such databases or where such databases are not maintained, drug samples collected during law enforcement seizures (samples not being held for prosecution and that would otherwise be destroyed) may be turned over to partnering community-drug checking programs or lab-based drug checking services for public health analysis, as is done by the MADDS partnership.[44]

FEDERAL AND OTHER NATION-WIDE DATA SOURCES are less useful than local data sources, because local drug supplies can be very different from place to place. However, numerous federal and nation-wide data sources exist, which can provide valuable, if more general, information about how the composition of illicit drug supplies vary across large geographic regions and change over time. These data sources can alert local communities to the detection of novel substances elsewhere. They can provide helpful information about the toxicological and biological impacts of novel substance exposures. All of these features can be used to improve local drug supply messaging, prevention education, and healthcare services for people who use drugs.

Federal and nationally-representative drug supply data sources include (but are not limited to):

- **U.S. National Institute of Standards and Technologies (NIST)** – NIST's Rapid Drug Analysis and Research (RaDAR) program provides lab-based drug checking services and analysis of drug samples provided by a variety of partnering agencies. They publish a monthly newsletter highlighting recent trends as well as reports about novel substances in the drug supply and other drug trends.
- **The Center for Forensic Science Research and Education (CFSRE)** – a non-profit foundation that provides lab-based drug checking services and produces regular reports about novel substances identified in the U.S. drug supply and their known toxicological effects, made available on the foundation's website.
- **StreetCheck** – a web-based data collection platform for community-based drug checking programs run by Brandeis University. StreetCheck maintains several dashboards showing national drug supply trends and maintains a collection of analytical reports, health alerts, and other information on their website.
- **National Drug Early Warning System (NDEWS)** – a nation-wide drug surveillance system, led by the University of Florida, that tracks drug supply data across numerous national databases and sentinel sites, offering weekly briefings, email updates, and timely alerts about unexpected overdose clusters.
- **National Forensic Laboratory Information Service (NFLIS)** – the U.S. Drug Enforcement Administration's (DEA) nation-wide database of law enforcement seizures submitted to crime laboratories for analysis. Reports on trends and discoveries in drug seizure

Other Sources of Drug Supply Data

data are regularly provided on the NFLIS website, and other data may be made available upon request.

- National Emergency Medical Service Information System (NEMSIS) – a national repository of EMS data maintained by the U.S. National Highway Traffic Safety Administration. Monthly reports and data dashboards are available on the NEMSIS website, and other data may be made available upon request.
- State Emergency Department Database (SEDD) – a nationally representative database of hospital-owned emergency department visits not resulting in hospitalization, regardless of payer. SEDD is maintained by the Agency for Healthcare Research and Quality (AHRQ). Statistical briefs are available on the SEDD website, and other data is available for purchase. Costs vary by state and by year.

Audiences

People who use drugs should be the primary audience for communicating information about the drug supply. Many styles of communication can be used to engage people who use drugs, from educational fliers to maintaining displays where community-based drug checking is offered.

However, experts agreed that the greatest potential for risk reduction among people who use drugs, whether an individual is receiving drug checking results about a single sample or information about broader drug trends in their area, lies in one-on-one interactions with harm reduction staff.

Drug checking service users offered the same feedback, universally naming face-to-face interactions with trusted actors as their most preferred method of communication (see *How to Communicate*, below). Service users' preference for other forms of communication, such as phone calls, encrypted chat messages, printed newsletters, and websites, varied according to local norms and participants' access to resources like email accounts, cell phones, and other Internet-enabled devices. Local harm reduction and drug checking staff will most often be best equipped to make decisions about appropriate communication strategies. If questions about best practices arise, the drug supply advisory council may be asked to weigh in.

Audiences

General considerations identified by drug checking experts for effective communication with people who use drugs include the following:

- Participation in drug checking or harm reduction services, where face-to-face messaging can occur, may be risky for some people who use drugs. Some states offer no legal protections for drug checking participants.[36] Some states offer no legal protections against paraphernalia laws to harm reduction participants.[45,46] The legal risks—both real and perceived—faced by people who use drugs may restrict the ability of community-based organizations to safely offer these services and communication efforts in public spaces, in spaces co-located with other services, or at all.
- Cultures and practices of substance use vary across regions. Messaging should align with how local people who use drugs are interacting with the drug supply.
- One-on-one communication creates an opportunity for a deeper discussion about the data, which can help people who use drugs recognize how the data applies to them and their situation.
- Messaging should avoid punitive words or tones that incite feelings of shame, anger, or fear. Examples of punitive messaging include: blaming certain people for the content of the local drug supply; blaming people who use drugs for their choices or implying that they are irrational and can't make free choices; using language that implies blame or intention without improving the accuracy of drug supply messaging (i.e. referring to drug products as "laced" or "contaminated"); and using language that mirrors public messaging from law enforcement agencies (i.e. stating that there must be a "crack down" or that something or someone "must be stopped" or gotten "off the streets").
- In addition to trained harm reduction staff, community members who are well connected within local drug networks can be effective messengers and educators. Building collaborative relationships with respected and experienced community members can help drug supply communications reach more people.

HARM REDUCTION PROFESSIONALS, in particular the staff, peer specialists, and outreach workers at syringe services programs, are another important audience for drug supply communication. Access to accurate drug supply data enables harm reduction, outreach, and other support staff to connect with people who use drugs more effectively. This knowledge can help drug checking technicians better interpret drug samples brought in for analysis and allow them to provide context for any unexpected substances that are identified. It can also assist harm reduction staff in educating people who use drugs and other key stakeholders about the relative risk of exposure to various substances, how to reduce those risks, and how to respond when such exposure does occur.

HEALTHCARE PROVIDERS, treatment providers, and other professionals who serve people who use drugs are important secondary audiences for drug supply communications.[44,47–49] Depending on local context, such actors may include:

- **Emergency medicine** providers, to help improve responses to complex overdose or atypical overdose presentations.
- Providers working in **inpatient settings**, to help improve withdrawal management following exposure to complex or adulterated drug supplies.
- Medical directors in **local jails**, to improve screening, withdrawal management, opioid use disorder treatment, and linkage with appropriate services after release.

Audiences

- **Opioid treatment programs, community paramedics, and office-based providers** who offer access to medication for opioid use disorder, to more effectively manage complex withdrawal syndromes and facilitate induction into treatment.

Drug supply communication that includes clear and actionable guidance on how to foster stigma-free conversations about these and other concerns may also benefit many health care professionals.

THE GENERAL PUBLIC may be an appropriate audience for drug supply communications under certain circumstances. Effective drug supply communication may be helpful in correcting misinformation or reducing unwarranted panic that misinformation can produce. For example, some U.S. communities have received alerts from local schools and media alerts suggesting that cannabis products, including those used by high-school aged children, have been found to contain fentanyl.[50] These stories are almost always false, but they can provoke genuine fear and produce backlash against evidence-based public health programs. Effective drug supply communication can respond to such misinformation or, ideally, prevent it from happening in the first place. Age-appropriate, fact-based communication about the local drug supply may also improve health education and risk reduction efforts among adolescents and young adults.[51] Drug checking experts also suggest that drug supply communications present important opportunities to educate the public about evidence-based responses to substance use and reduce fear, confusion, or stigma that may be associated with essential public health interventions for people who use drugs.

Drug Supply Advisory Councils

What are drug supply advisory councils?

Drug supply advisory councils are expert groups composed of community members with special skills or knowledge related to the local drug supply, local substance use practices, local communities and cultures, the health and wellness of people who use drugs, and/or effective communication practices. Their role is to guide the collection, interpretation, and dissemination of drug supply data. Where community-based drug checking services are available, these advisory councils often operate in close alliance with those service providers; importantly however, drug supply advisory councils can operate effectively even in communities where drug checking services have not yet been established.

Most drug supply advisory councils currently convened in the United States operate as informal collectives associated with a community-based organization or a community-university collaboration. Drug supply advisory councils may be convened as a formal, locally-sanctioned committee, with individual members appointed by the city or county, for example. A thoughtfully constructed community-government coalition may be able to serve this function as well, depending on local needs and resources. However, pre-existing coalitions whose work overlaps with drug supply-related concerns (i.e. substance use prevention coalitions, overdose fatality review teams, etc.) are generally not appropriate bodies to serve as drug supply advisory councils. Such coalitions require very different kinds of expertise and representation than are needed on drug supply advisory councils, and dividing the energies of an existing coalition across two separate priority areas risks reducing their success on both fronts.

Drug Supply Advisory Councils

Several experts interviewed for this toolkit emphasized that separation between drug supply advisory councils and local public health departments is helpful for maintaining community trust as well as the objectivity and independence of the council. At the same time, local authorities can make significant contributions to the formation, sustainability, and effective operation of drug supply advisory councils. Examples of those contributions include:

- Funding regular stipends for drug supply advisory council members, either through direct payments or through a contract with a local harm reduction program equipped to sponsor and facilitate the council's work;
- Lending public legitimacy to the drug supply advisory council through statements of support, endorsement of council decisions, and collaborative communications strategies;
- Ensuring the drug supply advisory council has representation on city of county task forces, advisory groups, or committees whose work is concerned with the health and wellbeing of people who use drugs.

An example of one such community-based drug supply advisory council is Massachusetts Drug Supply Data Stream (MADDS) Advisory Board. MADDS is a drug checking and drug supply data collaboration between Brandeis University, the Massachusetts Department of Public Health (DPH), and numerous community partners across the state. As part of that collaboration, MADDS has assembled an Advisory Board that consists of:

- Individuals with experience as community-based drug checking technicians;
- Leaders of local harm reduction organizations;
- Local drug checking service users;
- Local drug suppliers;
- Experts specializing in analytical chemistry and/or toxicology; and
- Other community experts with knowledge of research chemicals and novel psychoactive substances.

MADDS recruits many of its Advisory Board members from local organizations involved in the collaboration. Some individuals with experience as drug checking service users and/or drug suppliers are identified through their work as peer specialists in local harm reduction programs. Others have been identified and directly recruited by trusted community referrals. These individuals contribute essential knowledge to the MADDS collaboration that few other individuals could provide. Each member of the MADDS Advisory Board receives a stipend of $2,000 annually for their participation on the board, which is in line with compensation rates typically offered to scientific experts in similar advisory roles.

Though Massachusetts DPH is a collaborator, lDPH does not have a representative on the MADDS Advisory Board. Instead, the composition of the Advisory Board ensures that the close handling of sensitive or potentially mishandled drug supply data remains in the hands of community members who are most trusted by people who use drugs and can offer the most reliable expertise for interpreting that data. The Advisory Board, as its name suggests, then serves as an advisor to DPH, offering guidance on when and how to advance drug supply-related interventions and communications.

Drug Supply Advisory Councils

The MADDS Advisory Board meets at least monthly. Emergency meetings can be convened if a recent finding from community-based drug checking programs or other data sources requires a quick determination about whether to issue a formal communication or alert. The Advisory Board also maintains regular communication over encrypted messaging apps, allowing MADDS leadership to informally request insight and feedback from Advisory Board members as the need arises.

THE ROLE OF DRUG SUPPLY ADVISORY COUNCILS should be, above all, one of trusted stewardship over local drug supply data.[37] This means ensuring that people who use drugs and drug supply experts control the initial interpretation and dissemination of drug checking data they produce. This also means ensuring the council maintains the ability to determine what data from any source is safe to release widely and what should be restricted due to the risk of additional stigma, shame, or harm.

As data stewards, drug supply advisory councils should be granted authority to determine when drug supply communications are or are not warranted, offering guidance to public health authorities and other local partners on appropriate messaging and communication strategies on a case-by-case basis. They may also be able to suggest new harm reduction and prevention strategies; advocate for additional services, funding, or pilot programs in response to drug supply data; and advise local authorities on appropriate policy responses to substance use.

Importantly, drug supply advisory councils must be able to generate locally specific and culturally appropriate language in all drug checking communication, which directly impacted community members can help advise.[37] Culturally appropriate messaging not only improves the reach and accessibility of drug supply data. It also avoids new risks that can be created by ascribing meaning to drug supply data that do not align with local culture, knowledge, or values.[37]

In First Nations and Tribal communities, drug supply advisory councils should be appointed by the appropriate Tribal leaders and assembled in a manner representative of the Tribal community, according to local decision-making practices. Depending on local culture and governance, First Nations may choose to empower the council to enact and maintain ownership of any and all drug supply data the community has produced (see *Data Sovereignty*). It may also be appropriate for First Nations drug supply advisory councils to sit in circle with the wider community to promote transparency, identify needs and priorities, and make determinations collaboratively. Non-Tribal agencies should defer to Tribal practices, preferences, and decisions if entering a collaboration with First Nations or Tribal entities.

WHY ARE DRUG SUPPLY ADVISORY COUNCILS NEEDED? Drug checking experts emphasize that drug supply data is unlike other epidemiological datasets. It is complex, challenging to interpret, and easy to misapply. Further, the risk of harm due to the spread of poor or inaccurate drug supply data—such as promoting false confidence in a potentially risky drug product or inciting unwarranted panic—is very real. Thus, it is essential that potentially sensitive data collected from community-based drug checking services be stored, managed, and interpreted by a qualified team working in direct partnership with but independently from local public health agencies.[40]

Drug Supply Advisory Councils

Further, drug supply advisory councils are essential for reliable analysis and interpretation of drug supply data from community-based drug checking services and elsewhere. For example, if a post-mortem toxicology report shows the presence of both fentanyl and methamphetamine in an individual who died of an overdose, what does this mean? Does this suggest that local stimulants could be contaminated with fentanyl, potentially putting all people who use stimulants at risk? Is this evidence of polysubstance use that offers little insight into the risks the average person using stimulants may face from opioid contamination? Drug supply advisory council members should be empowered to investigate these cases and ensure that any conclusions drawn from them are reasonable and reliable. The council should also be trained in the limitations that are baked into drug supply data, including the extreme selection biases that nearly all data sources are subject to.

> **"Drug checking data isn't like other sorts of data. It's very complicated. It's not very straightforward. It's not directly applicable unless you have more detailed information about what the person experienced."**
>
> **DRUG SUPPLY DATA EXPERT**

THE TYPES OF EXPERTISE MOST NEEDED ON A DRUG SUPPLY ADVISORY COUNCIL are those most often possessed by professional and lay actors with direct knowledge of the drug supply, how drug supply data is produced, and how drug exposures are affecting people who use drugs. Such experts can be identified through local harm reduction organizations, local advocacy coalitions, or recommendations from directly impacted community members.

According to drug checking experts, personal experience with the local drug supply and/or direct engagement with people who use drugs is the single most important domain of expertise that should be represented on any drug supply advisory council. People who use drugs will be most directly impacted by changes in the drug supply and by choices made in drug supply communications. Therefore, intimate knowledge of the needs, preferences, and circumstances of people who use drugs is essential for effective messaging.

Other subject matter experts who may be appropriate for a drug supply advisory council include:

- Local drug checking technicians (trained staff who provide drug checking services);
- Toxicologists familiar with illicit substances and their biological effects;
- Chemists familiar with the production and adulteration of illicit drugs;
- Local or regional healthcare providers, especially those working in emergency medicine;
- Community paramedics who respond to overdose or provide linkage to treatment;
- Representatives from First Nations or Tribal communities (if the Tribal government is not directly overseeing drug supply data management and communication to begin with);
- Representatives who are deeply engaged with local communities in ways beyond local harm reduction services.

Drug Supply Advisory Councils

Some community-based drug checking programs invite individuals with prior experience in drug manufacturing and/or distribution to serve as advisory council members. One expert reported recruiting these individuals immediately following their release from incarceration, noting that they were often the most valuable members of their data and communications team.

When to Communicate

Community-based drug checking and harm reduction settings are the most important opportunities for drug supply communication.

Experts agree that face-to-face conversations between these trusted organizations and people who are at a decision point about whether and how to use drugs they have obtained is where the most risk prevention work enabled by drug checking takes place. These organizations can further scaffold this messaging with posters, handouts, and other tools (see *How to Communicate*, below).

"At the end of the day, I want to know what I'm doing."

DRUG CHECKING SERVICE USER

When to Communicate

The most appropriate opportunity for initiating these conversations is when service users receive their drug checking results. Community-based programs have developed many methods for returning drug checking results:

- In person, at the point of care;
- In person, at some later time after drug analysis has been performed;
- Remotely, such as through an app or text message;
- Through a designated third party named by the service user when submitting a sample for analysis; and,
- Via outreach through a designated outreach worker who has been sufficiently trained to deliver drug checking results effectively.[52,53]

> **"I personally get drugs tested for my personal as well as community safety. As available more education and knowledge would be beneficial to everyone."**
>
> **DRUG CHECKING SERVICE USER**

Whatever the method of engagement, drug supply communication in these community-based settings should follow three general rules:[54]

1. **The data being shared must have immediate utility to people who use drugs.** This means communicating how the information relates to them and/or the drug sample they have brought for analysis, including what sensations, side effects, and other risk characteristics are associated with the substances detected. This also means providing tailored risk reduction messaging and supporting that person in making the best choice for themselves (throwing the drug away, changing route of administration, using less of the drug, or even using the drug anyway because they are at risk of withdrawal if they don't) as safely as they possibly can.
2. **Building trusting relationships with people who use drugs is more important than data collection.** This principle might take different forms at different times. It may mean declining to collect and store data about samples brought to community-based drug checking servicee until trust is built with the community being served. It may also mean collecting and reporting data with less geographic specificity to preserve service users' safety and privacy (i.e. reporting the origin of a sample by county instead of by neighborhood; or reporting the service site that collected the sample instead of the location where the sample was purchased). A community-centered drug supply advisory council would be well-equipped to tackle these and other questions about local best practices.
3. **Effective drug checking and messaging strategies are more important than aggregate data analysis.** Drug supply monitoring activities (including systematic drug supply data collection, analysis, and dissemination through reports, alerts, and dashboards) are time- and resource-intensive activities. Prioritizing these activities may require placing undue burden on community-based organizations or artificially limiting the flexibility they need to tailor their services to each unique service user. Therefore, the freedom and ability of community-based drug checking programs to adapt their service delivery and messaging strategies should take priority over these other public health activities.

When to Communicate

PUBLIC DASHBOARDS AND DATABASES are an increasingly common strategy for the wider dissemination of drug supply data. They respond to the question of *when* to communicate with the answer that most public health experts prefer: always.

On the one hand, dashboards can quickly and effectively render large or complex datasets comprehensible to anyone with an Internet-capable device. On the other hand, dashboards are, almost by definition, designed and produced at a distance from the people that data represents. Decision-making processes for determining what to include in dashboards generally lie with a single, centralized authority, often removed from the "public" toward which the dashboard is meant to face (see *What to Communicate*, below). And, importantly, not everyone has access to an Internet-capable device (see *How to Communicate*, below).[39,55]

Therefore, careful consideration is necessary when considering whether a drug supply dashboard is the right thing to pursue. Based on recommendations from drug checking experts, communities may want to consider the following questions when proposing, populating, and updating any kind of public-facing resource for drug supply data:

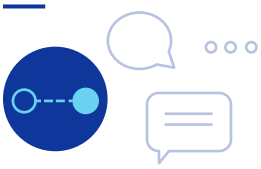
Is the creation of a drug supply data dashboard likely to increase or decrease harm and stigma against harm reduction and/or people who use drugs at this time?

- Will the benefit of a public dashboard outweigh the potentially negative effects of community backlash or loss of goodwill towards harm reduction organizations?
- Could a semi-public or a private, internal dashboard serve the same purpose or serve as an intermediate step until a public dashboard becomes feasible?

Would drawing attention to local drug checking services worsen pre-existing conflict between harm reduction programs and law enforcement agencies?

- Has local law enforcement pursued a positive relationship with harm reduction organizations and adopted policies that reduce the risk of interference with harm reduction services?
- Is there any history of law enforcement disruption at harm reduction service sites, such as monitoring service sites or confiscating harm reduction supplies from participants, that could be worsened by shining a spotlight on harm reduction activities?
- Has a memorandum of understanding been established with local law enforcement that would provide community-based drug checking programs assurances that law enforcement will not leverage drug supply data in support of criminal investigations?

When to Communicate



Will the collection of robust, high-quality data for the dashboard interrupt drug checking services or one-on-one drug supply communication in community settings in any way?

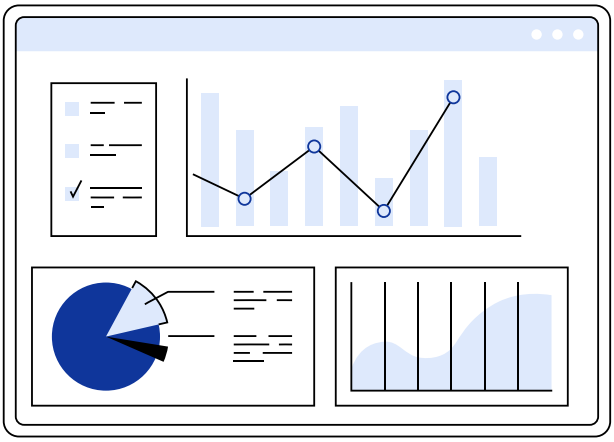
- Do sufficient human and financial resources exist to maintain a dashboard without compromising community-based services at this time?
- Will rigorous data collection in community-based settings threaten the truse that drug checking programs are building with people who use drugs?
- Is it too early in the implementation process to identify appropriate and actionable metrics?

Who is the intended audience of the dashboard, and how is the data presented actionable for them at this time?

- Have members of the local community (especially the drug supply advisory council and local people who use drugs) voiced a desire for a dashboard?
- Do most drug checking service users have access to phones or other Internet-capable devices that they need to view an online dashboard in the first place?
- Are healthcare workers able to respond to data in the dashboard in their clinical practice and not limited by strict hospital protocols, for example?
- How recent does published data need to be in order to remain actionable to dashboard audiences, depending on who is using it and how it is being used?

How reliable is the data at this time?

- Are there significant biases in the data, and are those biases likely to be corrected as drug checking implementation or other forms of data collection scale up?
- How much vetting of data and data visualization is required ahead of publication, and how long will those processes take?
- Have data on analyzed drug samples been through secondary analysis prior to public release?
- Have unusual or remarkable cases been thoroughly investigated, their context and meaning for the wider drug supply as fully understood as possible?



> **"[People who use drugs] are not looking at websites and dashboards like this."**
>
> DRUG SUPPLY DATA EXPERT

When to Communicate

HEALTH ALERTS, BATCH ALERTS, and other forms of event-based, time-limited, rapid communication are a foundational public health tool with many potential applications for drug supply communication. Alerts may be issued by state or local health authorities, through pre-existing emergency management systems, or by community-based drug checking programs themselves. These determinations can be made by each community on a case-by-case basis, with direct input from the local drug supply advisory council, drug checking service providers, and people who use drugs.

The question of *when* to issue an alert is not always straightforward. What kinds of vetting should information be subject to prior to an alert? How quickly should that information be released? And how significant are the potential consequences of misinformation, poor execution, and false alarms?

The British Columbia Center on Substance Use (BCCSU) has identified four events as possible triggers for a health alert in their local community:

- The identification of harmful substances not previously seen in the local supply;
- The identification of novel or unknown substances in the local supply;
- Reports of unusual or unexpected symptoms following the use of a particular substance class; and
- The discovery of an association between a known substance associated and a documented overdose cluster.[47]

BCCSU emphasizes that any decision to release such an alert must follow a thorough review by drug checking experts and harm reduction service providers to ensure that the information to be included in an alert is reliable (i.e. that there is minimal risk of instrument error, reporting error, or misinterpretation of the data) and that the findings are supported by—or at least compatible with—trends that can be gleaned from other data sources, especially post-mortem toxicology and law enforcement seizure data (depending on limitations in the timeliness or reliability of those other sources).[47]

The MADDS program in Massachusetts implements a different protocol. When determining whether to issue health alerts, MADDS leadership does not make use of a pre-determined list of potential triggering events. Instead, they seek guidance from numerous partnering organizations and experts on a case-by-case basis when any new finding of interest comes to their attention. They consider several factors including known drug combinations, toxicology interpretations, and triangulation of drug checking findings with other available data to determine whether an alert is merited and whom alerts should target [44]

When to Communicate

GUIDANCE FROM MADDS PROGRAM, MASSACHUSETTS

A drug checking expert explains their organization's process for determining whether a health alert should be issued.

"The general steps that we take [before issuing an alert] are this:

1. We look at our initial results. We're looking at our FTIR results and our test strips results.
2. We're looking at the contextualized data from the participant. What's their user experience?
3. Then we're looking at the lab (GC-MS) results.
4. Then we're going to speak to the people collecting the data, so that's why I might have a follow-up conversation with a [drug checking] technician.
5. I may speak with a leader of the harm reduction organization or whoever's best to speak to that topic.
6. I might speak with both of them.
7. I'm going to get additional contextual information on other things. Not just the use experience, but what else are they hearing? Is this similar to other trends they're seeing? Has there been a [law enforcement] bust? What's police involvement look like in the area?
8. I'm going to look for consistent geographic and time trends as well and see if we can determine how anything is moving.
9. Once our internal team does that, we bring it to our [Drug Supply] Advisory Board. We have bi-monthly meetings.
10. Then we're going do a check for [scientific] literature. We're going to do a data dive. We're going to re-vet that.
11. Then we're going to discuss with the toxicologist, if there's a novel substance.
12. We're also going to look at routes of administration, at how folks are using [the drug].
13. We're going to bring that all back to the Advisory Board and discuss with them what should happen.

Based on that, are you thinking we should issue an alert? Should we issue a less-formal communication? Or is this something where I'm just going to go and communicate back to the drug checking program staff or leadership whom I spoke to already and asked them to verbally deliver guidance [to service users] and see how that's going?"

Finally, the timeliness of alerts should be taken into consideration, especially given the amount of investigative work that may be needed to determine if one is merited at all. Some experts recommend that alerts be issued no later than two weeks following the triggering event.[49] Some reported alerts being issued within days, and others described alert vetting processes taking months to complete. If issuing timely alerts proves challenging, or if sounding all public alarms may not be beneficial for any reason, other, less formal communications, briefs, and updates can be circulated among target audiences in lieu of formal health alerts or emergency warnings.

Issuing many emergency announcements one after the other can lead to "alert fatigue," or the dulling of public response to alerts because they are seen as commonplace.[49] However, most drug checking experts reported that emergency alerts in their home communities were uncommon because the criteria for issuing one was rarely met.

What to Communicate

Audience segmentation, or the separation of target audiences into subgroups with specific needs and interests, is an important feature of public health communication.[55] Most experts identify people who use drugs and professionals who serve people who use drugs (generally, harm reduction and healthcare providers) as the two primary audiences for drug supply communication, and the needs of these two populations are rarely the same (see *Audiences*, above).[48,49]

According to experts, people who use drugs will likely benefit most from drug supply data that is more granular (i.e. focused on their specific drug sample) and tailored to their personal circumstances, such as they would receive in one-on-one interactions with drug checking technicians and harm reduction staff. Aggregate or summary data about the drug supply may have less utility for people who use drugs, but that doesn't mean this audience isn't interested. Summary data can be communicated to people who use drugs through posters, flyers, pictures hung on the wall at service sites, and numerous other creative means. This allows those who are interested to take note and ask questions about what is being shared.

What to Communicate

In contrast, healthcare and harm reduction providers may find granular data less useful, preferring instead to receive generalizable data about trends in the drug supply—wider trends, often supported with lab-based or secondary analysis of drug samples, with which they can inform their patient engagement, educational strategies, and/or clinical practices.[44,47–49] Other kinds of summary data that are often useful to this audience include data visualizations of commonly co-occurring substances and reports on novel adulterants and their known or potential harms.[47] As this audience will need guidance to understand how summary data about the drug supply relates to the local community, consider including examples of actions that providers can take in their professional roles, guidance they can impart to their peers or the people they serve, and model language or messaging strategies for navigating these conversations in drug supply communications.

> **"Harm reduction is important for staying safe, you never know what's gonna happen to you and you're only as safe as your most marginalized so what benefits somebody else inherently benefits me"**
>
> **DRUG CHECKING SERVICE USER**

Despite these diverse needs, effective audience segmentation does not always require segmented communication. Many experts recommend that all drug supply communications be consistent and accessible to all audiences, regardless of which segment that communication is intended to target.[49] Possible strategies for maintaining a high level of accessibility include: writing all public communications for a 6th grade reading level or lower; pairing text with simple visualizations; including simple narratives and explanations; and offering summary statements about the data and its meaning for different audiences (see *Appendix 2: Examples of Drug Supply Communications*).

THE ESSENTIAL COMPONENTS OF DRUG SUPPLY COMMUNICATION remain largely the same, regardless of the message, the medium, or the target audience.[37,39,44,47,54]

1. **Drug sample analysis with secondary testing,** whenever available, is the preferred data to report in any written, electronic, or face-to-face drug supply communication. Unlike immunoassay test strips and FTIR devices available to most community-based drug checking programs, secondary analysis with technologies like GC-MS and LC-MS devices can produce the most complete and detailed information about a drug sample (see *Community-based Drug Checking Services*, above).

   Depending on the technology available, that additional information may include confirmation of substances suspected but ambiguously present in FTIR analysis, the inclusion of trace elements below the FTIR's limit of detection, and estimates of the relative proportions of different substances found in a drug sample. Point-of-care drug checking services produce reliable results, but secondary testing is especially necessary in the context of unusual or unexpected findings to reduce the likelihood of error from either lab-based or community-based technologies and avoid the dissemination of incorrect and potentially harmful misinformation.

What to Communicate

2. **What samples were sold as and other contextual information** about drug samples represented in any drug supply communication are necessary to ensure that audiences can correctly interpret that data. For example, many drug checking experts observed that a report displaying the number or percentage of drug samples containing both methamphetamine and fentanyl would be of little or no use to people who use drugs without knowledge of what those samples were expected to be. Were any of those samples sold as fentanyl but discovered to be adulterated with methamphetamine? Were any of those samples sold as methamphetamine but discovered to be contaminated with fentanyl? Were any of those samples intentionally sold as the mix of fentanyl and methamphetamine (sometimes called a "goofball")?

   Experts highlighted the importance of not only providing this contextual information but also of presenting aggregate drug supply data according to the expected substance, not according to their contents.

3. **The limitations of technologies and data sources used** to produce drug supply data should be conveyed, even briefly, in any drug supply communication. For example, when delivering drug checking results, harm reduction staff should take care to explain the limitations of immunoassay test strips and FTIR devices, including possible false positives, limits of detection, and other sources of uncertainty.[47] When sharing laboratory results, those limitations still exist but will vary according to the specific technologies that were used. Every source of drug supply data, from law enforcement seizure data to drug checking data to hospital toxicology data, is subject to sampling bias and measurement bias of some kind (see *Other Sources of Drug Supply Data*, above).

   Often the uncertainty inherent in drug supply data is described verbally or through text-based explanations. However, community-based drug checking programs and/or local public health authorities may want to collaborate with drug supply advisory councils to pilot and refine techniques for representing uncertainty visually or pictographically.[56]

4. **Sensory, toxicological, and clinical effects of substances** detected in the drug supply help maximize the utility of drug supply data. Best available information about toxic effects and drug-drug interactions can improve health care responses to drug related emergencies.[47] Descriptions of the sensory effects of different substances (i.e. whether they made service users feel sleepy or itchy or "speedy") and clarity about whether our knowledge of those effects is limited or evolving are both enormously helpful to people who use drugs. It may enable them to more safely manage their drug use experiences and detect unwanted adulterants based on a drug's effects. Finally, information about withdrawal symptoms or altered overdose presentations is directly useful to anyone, lay or professional, who might experience, witness, or respond to one of these emergencies.

What to Communicate

WHAT DO DRUG CHECKING SERVICE USERS WANT TO KNOW ABOUT THE DRUG SUPPLY, AND WHY?

HIGHEST PRIORITY!

How to be safer when using drugs that might contain things I don't want to use.

- "Important for safety for yourself and others"
- "Easy to share with others through word of mouth"
- "Helps reduce risk of overdose and other negative effects"

How often drugs turned out to be what they were sold as.

- "Helps you know how to respond to an OD"
- "This is helpful information to pass along to others"
- "It's helpful for folks who don't use opioids to understand what's in other drugs"
- "Even suppliers are saying, I don't want to kill nobody!"
- "You should be getting what you paid for!"
- "There's a lot of people here who want to live"

> **"All these pieces of information are useful to prevent accidental overdose or reactions we didn't intend to have. It also holds our suppliers accountable and can help us inform them."**
>
> DRUG CHECKING SERVICE USER

EVEN MORE IMPORTANT TO KNOW.

The possible side effects of cuts and added ingredients in my drugs.

- "Some people don't like the feel and can connect that feel to certain cuts"
- "Important to know how things affect you, so if you have a negative experience more than once, you know what caused it"
- "Helps you pay attention to what your body likes or doesn't like, what agrees with you or doesn't agree with you"
- "I have high blood pressure, and I don't want any cuts that could mess with my medication"

The cuts and added ingredients that commonly appear in certain drug products.

- "If you have a health condition that cuts might affect, you need to be able to avoid them"
- "Need to know if a drug has a sedative and is likely to knock you out"
- "Knowing the cuts is also important in case I or someone else may be allergic to it or have any medical issues that can spring up during drug use"

IMPORTANT TO KNOW.

The average percent of active drugs in dope (i.e. amount of fentanyl or xylazine vs. inactive cut).

- "Depends on what the local supply looks like, if it's stable or really varied"
- "Important for knowing how to dose yourself properly and not OD"
- "Folks will have a better sense of how their brains and bodies will be affected"
- "Helps you know where you should or should not be getting your drugs"

What to Communicate

5. **Actions that can be taken to reduce the risk of harm** should be included in all drug supply communication. Drug supply communications should be immediately useful to people who use drugs, and experts consistently report that recommended harm reduction strategies and specific action items improve both the utility and the comprehension of drug supply data by drawing direct connections between that data and individual drug use practices.

   Even if people who use drugs are not the primary target of that communication, people who serve people who use drugs—including members of the general public who might use drugs occasionally or have friends and loved ones who use drugs—can share and help implement risk reduction strategies.

6. **When and where a drug supply communication was produced** is essential information that should be included on all drug supply communications without exception. The drug supply can change quickly. Novel substances can appear or disappear in no time. The taste, texture, and appearance of drug products can change, sometimes for unknown reasons. Without a clear indication of when something was published, it is impossible to know whether a health alert, educational brief, or even a social media post contains up-to-date information. Further, drug checking experts warn that communications without a clear location of origin often circulate through other communities, especially online. This can result in the spreading of false information, the stoking of unnecessary fear and stigma, and the loss of trust in public health or drug checking partners.

A simple, text-based drug supply communication containing each of these necessary pieces of information may look like this:

> Drug Supply Alert
>
> [Name of city or county] [Date]
>
> Recently, [laboratory-confirmed substance] has been found in [description of drug product]. It appears to be [description of important contextual information]. We don't know [statement of the limitations of the drug supply data].
>
> [Specific harm reduction advice tailored to the alert-triggering substance].
>
> This alert should be discarded or removed from circulation after [date].

What to Communicate

For example:

Drug Supply Alert

Belk County – 01/01/2024

Recently, bromazolam has been found in local drugs sold as fentanyl. Bromazolam is a benzo that causes heavy sedation and may keep someone asleep even after they have been given naloxone. A little bit of this benzo is all that's needed to cause a long black-out.

We don't yet how common it is to find bromazolam in local fentanyl, so everyone should be careful.

In case of an overdose: GIVE NALOXONE, GIVE RESCUE BREATHS, GET THEM BREATHING. They may not wake up if they have taken benzo dope. The goal is to get them breathing again.

Discard this alert after 1/30/2024, when updated information will be available.

While each of these pieces of information is essential, there is not a single, best way to craft drug supply messaging. The message should reflect the language, norms, and values of the community to whom it is being delivered, and informal, face-to-face interactions with trained harm reduction and drug checking staff is the preferred means of communication among most people who use drugs (see When to Communicate).

A FEW COMMON MISTAKES IN DRUG SUPPLY COMMUNICATION were identified by drug checking experts. Some warned against including easily reproducible characteristics of drug products being described in health alerts, such as the **COLOR** of loose powders. Many report seeing the publication of alerts about a risky batch of "purple dope" or "orange heroin," only to discover that the alert had inspired copy-cat products. Suddenly, all the dope was purple. Or orange.

Several strongly advised against using **CATEGORIES THAT ARE NOT MEANINGFUL TO THE LOCAL COMMUNITY**. This may happen if the person(s) developing the drug supply communication aren't familiar with local cultures, drug markets, and social norms—for example, if the design work is being done by a third-party contractor or a data visualization partner who is disconnected from people who use drugs. Examples of unhelpful or confusing categories could include:

- Separating "fentanyl" and "heroin" into different categories, if local community members simply refer to all illicit opioids as "dope;"
- Lumping less commonly found drugs together under labels like "other stimulants" or "other analgesics." This may allow for statistical completeness, but the information has no utility for target audiences.

Many of these challenges can be avoided by ensuring that drug supply advisory councils have significant input into messaging strategies and product design.

What to Communicate

Experts also consistently advised against including **INFORMATION THAT REQUIRES SPECIALIZED KNOWLEDGE TO UNDERSTAND**. Examples provided of "highly specialized" information could include:

- Reporting biologically inactive substances. One example of such a substance is 4-anilino-N-phenethylpiperidine (4-ANPP), a precursor to fentanyl.[57] Most lay audiences will not be familiar with 4-ANPP and may mistake it for a potentially dangerous new substance. The presence of 4-ANPP is only useful insofar as it indicates the presence of fentanyl; thus, there is no reason to report on the prevalence of this precursor when the prevalence of fentanyl is also being reported.
- Reporting mixture analyses generated by FTIR software. The reliability of these analyses varies according to numerous circumstances unique to each drug checking event. Without a significant amount of contextual information and a high degree of familiarity with FTIR analysis software, these results are nearly impossible to interpret.
- Using complex graphs and charts that may not be familiar to members of the public. Comprehension can be improved if those visualizations are accompanied by text-based labels and explanations, but simplifying the entire communication strategy may produce better results.

How to Communicate

Trusted messengers are essential for effective communication. People who use drugs may be more likely to interact with public institutions (including social services, health services, criminal justice institutions, and law enforcement) and have negative interactions when they do.

This can reduce the trust that people who use drugs have in public agencies and the confidence they have in the communications and alerts those agencies release. Further, pre-existing community relationships directly affect who can or cannot serve as an effective messenger for drug supply communications. In some communities, for example, the relationship between community paramedics and people who use drugs may be strong and positive. In others, this may be a tense or even antagonistic relationship. The insight of drug supply advisory councils will be invaluable for navigating these local conditions.

TRUSTED MESSENGERS

MOST TRUSTED

Local harm reduction organizations

"[Harm reductionists] are out here helping us in our communities. They are the ones helping."

"Because they care more about the people than anyone."

Friends and others who use drugs

Local healthcare providers

"Friends have never put me in a situation where my best interests aren't being taken into consideration."

"[Healthcare providers] deal with people who use drugs, so they would know."

"[Healthcare providers] are there to help, technically, but they aren't giving out naloxone, they aren't giving out needles, not helping people in a real way."

Drug suppliers

Local EMS / Community paramedics

"They sell it. They would know."

"[Harm reduction staff] be out around us. The Health Department don't."

LEAST TRUSTED

Public health agencies

Law enforcement agencies

Social service agencies

"[Public health] is like the police."

"Everyone who uses drugs has trouble with the police."

"I don't know them."

"I'm not gonna ask them nothing."

How to Communicate

Drug checking service users overwhelmingly reported that local harm reduction organizations are their most trusted source of information. Trust in other potential messengers varied greatly but was most often tied to the degree to which a potential messenger had direct knowledge of the drug supply (i.e. other people who use drugs and drug suppliers), and whether they had regular, professional interactions with people who use drugs (i.e. local healthcare providers). Some, but not all, drug checking service users appealed to these kinds of expertise when naming sources of reliable information, even if their relationship with that information source was not good.

DIFFERENT CHANNELS AND MEDIA are available for conveying drug supply messages, each with different goals, strengths, and drawbacks. Community-based drug checking programs have developed many strategies for disseminating drug supply data,[39] including:

Word-of-mouth communication in one-on-one interactions.

- Overwhelmingly preferred by drug checking experts and service users.
- For many people who use drugs, communication with trusted harm reduction staff is their only source of information.
- Some people who use drugs are unhoused. They may or may not have access to a phone or any other way to get online for information that is only available electronically.
- Community members who are well-known among local people who use drugs and have earned the trust and respect of others can support this communication. Seek partnerships with these individuals to relay drug supply communications and create new avenues for community members to stay informed.

Visual displays at harm reduction program sites.

- An effective way to quickly convey summary drug supply data that is immediately relevant to people who use drugs.
- Can prompt conversations about risks and strategies for staying safe.
- Can prompt interest in using drug checking services among those who never have, improving both the positive impacts of the intervention and the quality of the drug supply data being collected.

How to Communicate

Small fliers and handouts that can be printed for distribution.

- Small handouts can describe drug supply trends, recent findings of interest, harm reduction education, risk reduction strategies, and much more.
- Drug checking service users voiced strong interest in this possibility, suggesting it would pose minimal risk to be carrying such handouts on their person.
- Service users also voiced interest in distributing informational handouts to others in the community.
- Outreach workers can be equipped with printed or electronic means to retrieve and report drug checking results when encountering servics users in the community.

SMS and text alerts.

- A means for circulating information and alerts very quickly.
- Many people who use drug checking services have limited or no access to mobile phones

Websites that the public can check regularly for updates and alerts.

- A great place to archive past reports and alerts for those who want to take a deep dive into how the drug supply has changed over time.
- Many drug checking service users don't have reliable access to the Internet.
- Drug checking experts overwhelmingly reported that service users are not engaging with online materials that they produce.

Social media posts

- A means for circulating information and alerts very quickly.
- The degree to which drug checking service users trust the information they find on social media varies greatly. Some consider it a fantastic resource. Others dismiss anything they read there as false or purposefully misleading.
- While social media platforms can improve public engagement, this is not guaranteed to be a good thing. Public comments on a social media post can convey hurtful, harmful, and stigmatizing responses, which can undermine the public health benefits of drug supply communication and discourage drug checking service users from engagement.

While face-to-face interactions are the backbone of drug supply communications, different communities may benefit from one or more of the other strategies, depending on local culture, resources, and circumstances. Drug supply advisory councils can provide important and necessary insights into which communication channels are right for their community at any given time.

Educate and Engage

Efforts to initiate, strengthen, and expand drug checking and drug supply communication in your community can generate new opportunities to improve public health and reduce the risks associated with the illicit drug supply. The possibilities are endless, but these are some opportunities to look out for:

Coalition building

Efforts to produce robust drug supply data and a well-run drug supply advisory council can open the door to other collaborations between involved entities. All too often, local agencies and institutions remain siloed from one another, leaving skilled workforces in each department unaware of how the others operate. Established interagency coalitions such as Overdose Fatality Reviews[58] and RxStat[59] have demonstrated how powerful these partnerships can be for improving local services and reducing the negative impacts of the illicit drug supply.

Community engagement through responsive drug checking

It may be the case that a public health concern, such as an unexplained overdose cluster or an unexpected change in the local drug supply, is identified in an area that does not have access to community-based drug checking. This could be an opportunity to expand point-of-care drug checking services into those areas, even if on a temporary basis, to improve knowledge about the drug supply, provide prevention services, and connect people who use drugs with information, resources, and other services. Responsive drug checking efforts have been implemented through the state-wide MADDS coalition and by the city of Chicago.[60]

Expand analytical capacity and data accessibility at local institutions

All drug supply data has gaps. Enhancing local capacity for drug supply data collection and analysis can generate opportunities to fill those gaps as the effort grows. For example, the discovery of a novel substance in the drug supply could prompt an appeal to local hospitals to purchase immunoassay test strips or other technologies so that healthcare providers can screen patients for exposure to that substance. Opportunities may exist to work with state and local medical examiners to adapt laboratory or record keeping procedures to better estimate the contribution of certain substances to harm in fatal overdose cases.

As noted above, law enforcement seizure data is arguably the most important source of drug supply data, **second only to community-based drug checking programs**. Local efforts could be enormously enhanced by building positive partnerships with law enforcement agencies to release that data to the drug supply advisory councils, or even to hand over seized drug samples that are awaiting destruction and disposal to community-based drug checking programs and/or partnering laboratories offering drug checking services.

First responder training

Drug supply communications may create new opportunities to collaborate with public safety entities, such as law enforcement agencies, EMS agencies, and dispatched crisis care teams who are interested in building or strengthening positive relationships with local harm reduction programs. Education could be offered to first responders by local public health agencies, community-based drug checking programs, or members of the drug supply advisory council, as appropriate. These professionals could even be trained and equipped to disseminate drug supply data to community members they meet through their work. Such efforts may improve understanding, build empathy, and empower more appropriate and effective overdose response in the field.

Improve healthcare services for people who use drugs.

Local public health agencies and harm reduction programs can pursue new partnerships with healthcare professionals who treat patients through local methadone clinics, federally qualified health centers, community paramedic programs, criminal justice settings, and elsewhere to ensure that local residents receive appropriate treatment for likely substance exposures.

Educate and Engage

For example, if patients with opioid use disorder live in an area where the tranquilizer medetomidine is prevalent in the opioid supply, they should be treated for both opioid withdrawal and medetomidine withdrawal, as indicated, when admitted to local hospitals. Providers who are helping patients initiate onto medication treatment for opioid use disorder should be aware of these withdrawal risks as well, offering additional pharmacological support to patients as needed.

Finally, primary providers, secondary providers, and pharmacists should be aware of possible interactions between substances found in the local drug supply and prescription medications that patients are receiving. This awareness will improve patient education and prepare these healthcare professionals to spot the symptoms of potentially hazardous interactions if they emerge.

Appendix 1: Methods

This toolkit summarizes the findings of three distinct research methods selected to identify current best practices and key considerations for drug supply communication: a review of current literature; semi-structured interviews with drug supply communication experts; and a survey among people who use community-based drug checking or other harm reduction services. All of these activities were completed between March and July 2025.

The **literature review** followed the protocol for a scoping review of existing evidence.[61] In brief, the review sought to answer three scoping questions about drug checking and drug supply communication:

1. What sorts of behavior change associated with overdose risk reduction is associated with the provision of community-based drug checking services?
2. What kinds of insights about the drug supply are community-based drug checking services able to produce, in aggregate?
3. What are the principles or best practices for communicating aggregate data from community-based drug checking services?

Any document identified in the search that offered concrete insight into one or more of these questions (i.e. empirical data, written program standards, expert opinion, etc.) was included in the review.

On March 24, 2025, searches were performed on two scholarly databases (PubMed and Web of Science) and on a public search engine (Google) with the following search strings: “drug checking” and “fentanyl test strips.” Any result returned from the PubMed and Web of Science databases were reviewed for inclusion. Any result from the web search that returned a document (i.e. a PDF or a DOC file) was reviewed for inclusion. The goal of this selection strategy among web-search results was to identify grey literature, how-to guides, program manuals, and other formal or semi-formal documentation produced by programs engaged or interested in community-based drug checking. To assist in refining the results of the web search, additional queries with the search strings “drug checking pdf” and “fentanyl test strips pdf” were performed.

Searches of the PubMed and Web of Science databases returned 508 non-duplicated results, which included peer-reviewed articles, peer-reviewed letters and commentaries, conference papers, and pre-prints. A title and abstract review identified 109 items directly related to drug checking and/or drug checking data. A closer review of these 109 items identified 20 items with content addressing the question of individual behavior change; 17 items with content addressing the question of how drug checking data can contribute to supply monitoring; and seven items with content addressing principles and best practices for wider dissemination of drug checking data. Internet searches returned seven white papers with direct relevance to these three questions. Each of these documents was closely reviewed for generalizable insights and for harmony with other documents identified in the review and with the views of drug checking experts and service users.

Between March and May 2025, **semi-structured interviews with drug checking experts** were carried out remotely (via video conferencing or telephone). Interviewees were selected according to several criteria, including: their prominence and recognized expertise within existing drug checking and harm reduction mutual aid networks; their capacity to offer insight on established best practices in a variety of social, demographic, and policy environments; and their experience as early adopters of these harm reduction strategies, especially the lessons they learned through the successes and failures that resulted from their efforts to forge effective

Appendix 1

drug checking and drug supply communications strategies in novel environments. Interviewees were identified through existing drug checking mutual aid groups and/or through direct recommendation by experts previously interviewed.

Interviews were semi-structured, meaning that they followed a set of pre-established questions, but could shift topics or include additional domains if the interviewee considered them important to discuss. Pre-established questions included the nature of the interviewee's work in harm reduction and drug checking; service delivery and communication standards within their local organization(s); other data sources that guide their communication and/or drug checking strategies (i.e. hospital toxicology data, overdose death data, etc.); best practices for wider communication of drug supply data; and other considerations for drug supply data collection, analysis, and dissemination.

A total of nine interviews were conducted with drug checking experts. Seven interviewees were trained drug checking technicians, all of whom provide drug checking services in local harm reduction organizations. Three interviewees frequently provided technical assistance to other community-based drug checking programs. Four interviewees worked in leadership positions in local harm reduction or drug checking organizations. Three worked in positions that are largely dedicated to the management, analysis, and dissemination of drug checking data. At the time of the interviews, informants held professional roles in California, Illinois, Minnesota, Massachusetts, Rhode Island, New York, Washington, Wisconsin, and British Columbia (Canada). Six had gained extensive drug checking experience in urban or metropolitan settings, five had experience in rural settings, and two had experience providing services in Tribal communities.

In June and July 2025, a **survey was conducted with drug checking service users** across the United States. The survey was written in the format of a first-round survey for a Delphi process;[62] namely, respondents were asked to rate their agreement on a 5-point Likert scale with a series of statements about drug checking and drug supply communication practices and to offer open-text explanations of why they rated each prompt the way they did. As there is very little existing literature on the service user preferences regarding drug checking service delivery and drug supply communication practices, this survey component was purely exploratory. For this reason, survey findings are presented in this document only in general (not strictly quantitative) terms.

Survey takers were recruited with staff assistance from harm reduction organizations in Maryland, Minnesota, North Carolina, Tennessee, and Texas (organizations in other states were invited to collaborate but were unable to do so at the time of data collection). Recruitment was driven by convenience, and survey completion took place via conversation with harm reduction staff, conversation with the author of this toolkit, or independently by the respondend using a paper survey form. A total of 30 service users completed the survey. Of these, 60.0% were male, 36.7% female, and 3.3% non-binary. The majority of participants (63.3%) identified as Black, 26.7% as white, 10.0% as American Indian, 10.0% as Hispanic, and 6.7% as Asian. Approximately 1 in 8 participants (13.3%) identified as more than one racial or ethnic identity.

To receive a full copy of the literature review, please contact Remedy Alliance.

Appendix 2: Examples of Print and Electronic Drug Supply Communications

Informational flier from Blue Mountain Heart2Heart (Washington state)

Best practice:
A clear description of the substance and its physical or toxicological effects is provided.

Short, clear language supports audience comprehension

Best practice:
Describes data in terms of what drug samples are sold as.

Illustrations and well-chosen colors make the flier more interesting to look at and easier to read or skim.

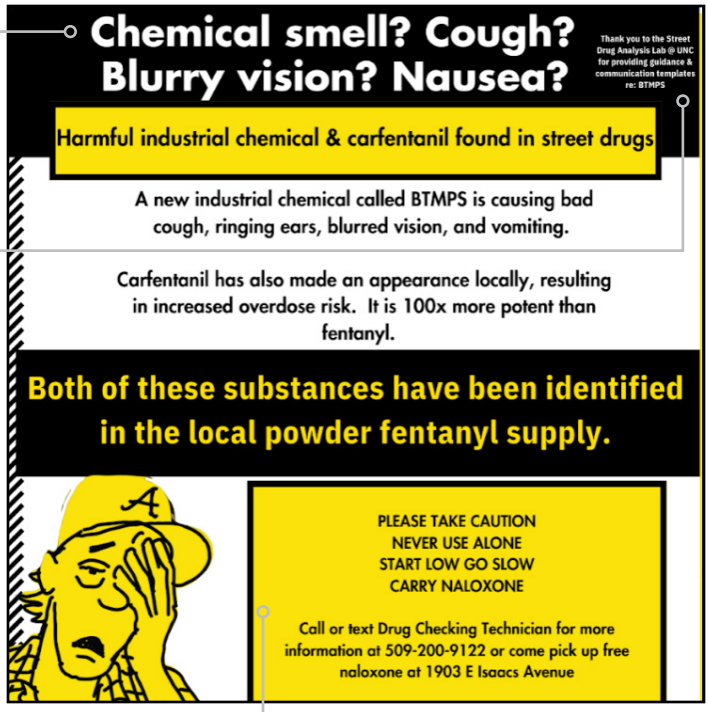


Image courtesy of Blue Mountain Heart2Heart

Best practice:
Specific harm reduction strategies are outlined.

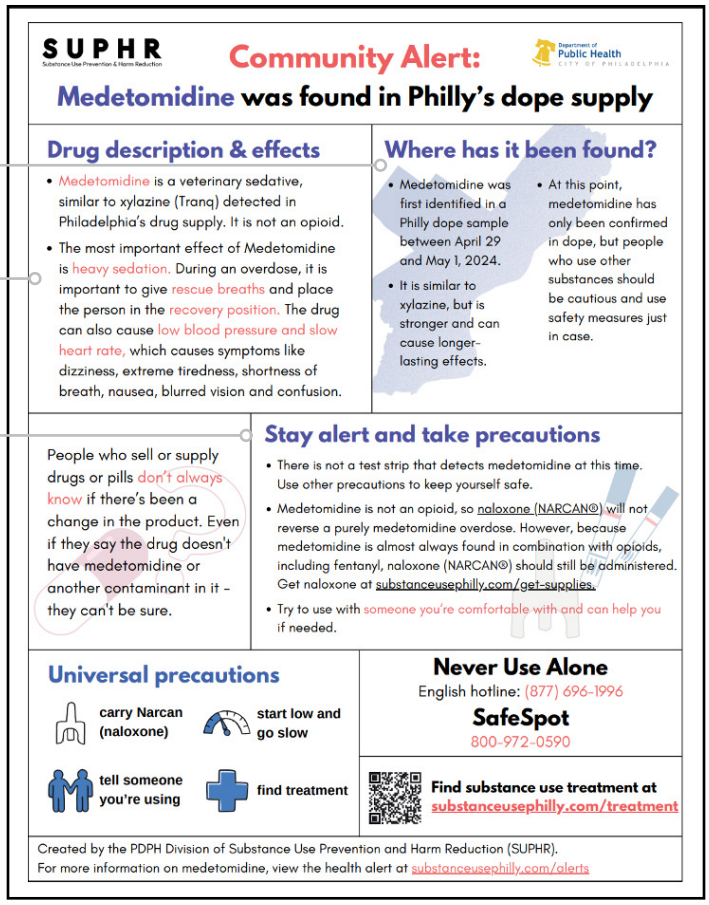
Appendix 2

Community Alert from Philadelphia Department of Public Health

Best practice:
Date and location of the data being shared is clear.

Best practice:
A clear description of the substance and its physical or toxicological effects is provided.

Best practice:
Specific harm reduction strategies are outlined.



https://www.substanceusephilly.com/medetomidine, accessed 8/8/2025

Results from drug checking services at the Alliance for Collaborative Drug Checking in San Francisco

Short, clear language supports audience comprehension

Best practice:
Describes data in terms of what drug samples were sold as or intended to be.

Best practice:
Date and location of the data being shared is clear.

Best practice:
A clear description of the substance and its physical or toxicological effects is provided.

Best practice:
A clear description of the substance and its physical or toxicological effects is provided.

Photo courtesy of Remedy Alliance For the People

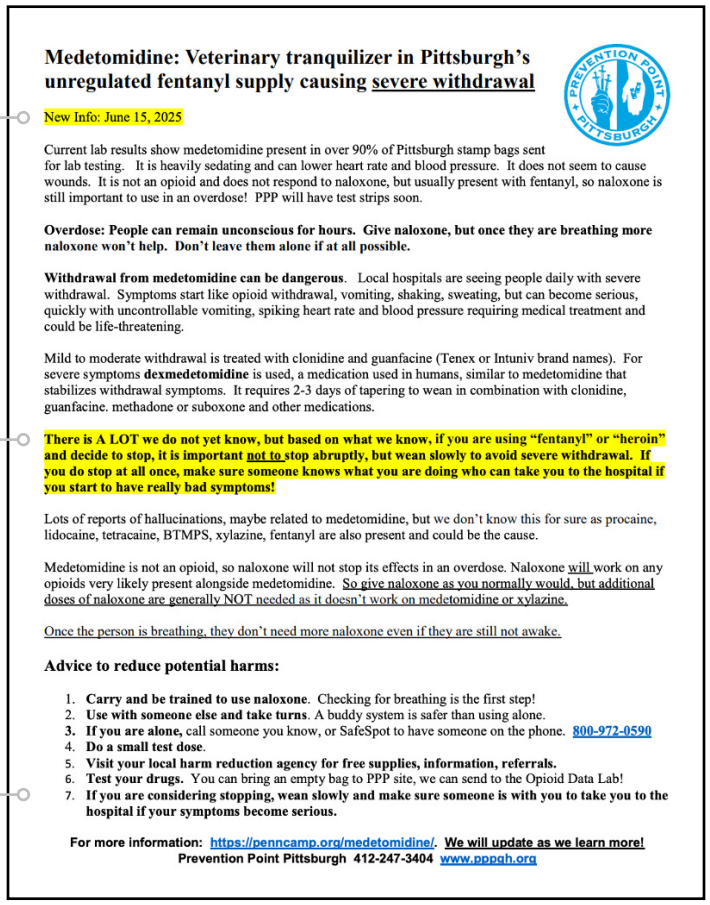
Appendix 2

Community Alert from Prevention Point Pittsburgh

Best practice:
Date and location of the data being shared is clear.

Best practice:
The limitations of current knowledge are spelled out.

Best practice:
Specific harm reduction strategies are outlined.



Medetomidine: Veterinary tranquilizer in Pittsburgh's unregulated fentanyl supply causing severe withdrawal

New Info: June 15, 2025

Current lab results show medetomidine present in over 90% of Pittsburgh stamp bags sent for lab testing. It is heavily sedating and can lower heart rate and blood pressure. It does not seem to cause wounds. It is not an opioid and does not respond to naloxone, but usually present with fentanyl, so naloxone is still important to use in an overdose! PPP will have test strips soon.

Overdose: People can remain unconscious for hours. Give naloxone, but once they are breathing more naloxone won't help. Don't leave them alone if at all possible.

Withdrawal from medetomidine can be dangerous. Local hospitals are seeing people daily with severe withdrawal. Symptoms start like opioid withdrawal, vomiting, shaking, sweating, but can become serious, quickly with uncontrollable vomiting, spiking heart rate and blood pressure requiring medical treatment and could be life-threatening.

Mild to moderate withdrawal is treated with clonidine and guanfacine (Tenex or Intuniv brand names). For severe symptoms **dexmedetomidine** is used, a medication used in humans, similar to medetomidine that stabilizes withdrawal symptoms. It requires 2-3 days of tapering to wean in combination with clonidine, guanfacine. methadone or suboxone and other medications.

There is A LOT we do not yet know, but based on what we know, if you are using "fentanyl" or "heroin" and decide to stop, it is important not to stop abruptly, but wean slowly to avoid severe withdrawal. If you do stop at all once, make sure someone knows what you are doing who can take you to the hospital if you start to have really bad symptoms!

Lots of reports of hallucinations, maybe related to medetomidine, but we don't know this for sure as procaine, lidocaine, tetracaine, BTMPS, xylazine, fentanyl are also present and could be the cause.

Medetomidine is not an opioid, so naloxone will not stop its effects in an overdose. Naloxone will work on any opioids very likely present alongside medetomidine. So give naloxone as you normally would, but additional doses of naloxone are generally NOT needed as it doesn't work on medetomidine or xylazine.

Once the person is breathing, they don't need more naloxone even if they are still not awake.

Advice to reduce potential harms:

1. **Carry and be trained to use naloxone**. Checking for breathing is the first step!
2. **Use with someone else and take turns**. A buddy system is safer than using alone.
3. **If you are alone,** call someone you know, or SafeSpot to have someone on the phone. 800-972-0590
4. **Do a small test dose**.
5. **Visit your local harm reduction agency for free supplies, information, referrals.**
6. **Test your drugs.** You can bring an empty bag to PPP site, we can send to the Opioid Data Lab!
7. **If you are considering stopping, wean slowly and make sure someone is with you to take you to the hospital if your symptoms become serious.**

For more information: https://penncamp.org/medetomidine/. We will update as we learn more!
Prevention Point Pittsburgh 412-247-3404 www.pppgh.org

https://www.instagram.com/ccrip_outreach/p/DK9cGS1MYtV/, accessed 8/8/25

An informational board maintained by a community-based organization

Best practice:
Date and location of the data is inherently clear, as the info board is in a fixed location and updated regularly.

Short, clear language supports audience comprehension

Best practice:
A clear description of the substance and its physical or toxicological effects is provided.

Placing the informational board in a high-traffic area improves dissemination and invites conversation between staff and service users.

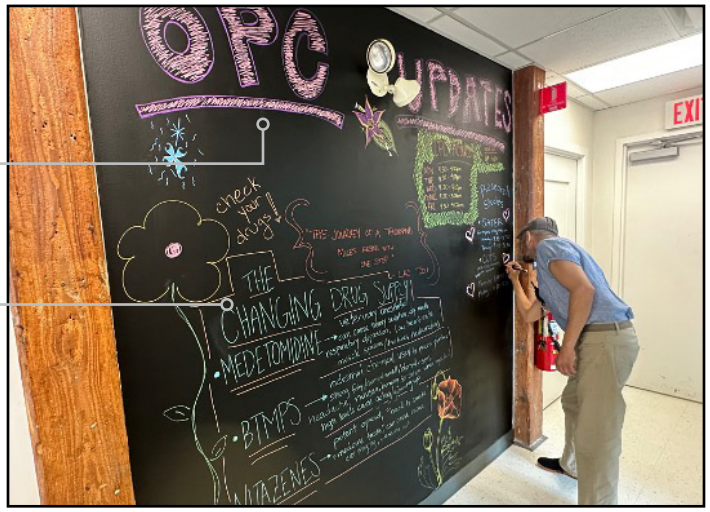
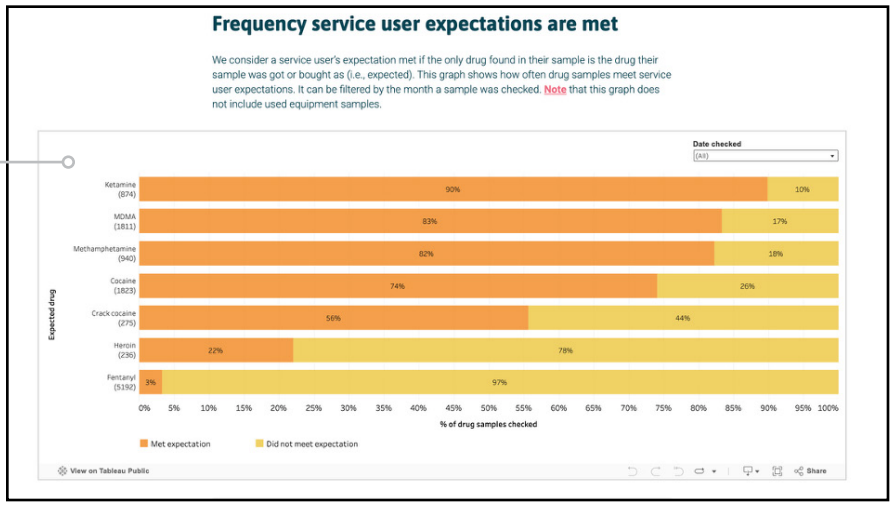


Photo courtesy of the Overdose Prevention Center at Project Weber/Renew

Appendix 2

An excerpt from the data dashboard maintained by Toronto's Drug Checking Service

Best practice:
Describes data in terms of what drug samples were sold as or intended to be.



Clear explanations of what the labels on the chart mean. Avoids confusion and helps those who are educating others about the data/

Met expectation: The expected drug was the only drug found. For example, if a sample was expected to be fentanyl and only fentanyl was found, or the only substances found were fentanyl and mannitol (a non-drug filler), we consider that sample having met the service user's expectation.

Did not meet expectation: The expected drug was not found or, more commonly, the expected drug was found in combination with other drug(s) the service user did not expect. For example, if a sample was expected to be fentanyl and fentanyl was not found or, more commonly, fentanyl was found with caffeine and bromazolam (i.e., other drugs the service user didn't expect), we consider that sample not having met the service user's expectation.

Expected heroin: For this graph, if the drugs found were heroin, or heroin and drugs similar to heroin (6-MAM, codeine, morphine, papaverine), we consider that sample to have met the service user's expectation.

Expected ketamine: For this graph, if drugs found were ketamine or ketamine and drugs similar to ketamine (2-fluoro-2-oxo PCE, deschloroketamine (DCK), fluorexetamine (FXE), norketamine), we consider that sample having met the service user's expectation.

Expected MDMA: For this graph, if drugs found were MDMA or MDMA and drugs similar to MDMA (MBDB, MDA, MDA-related, MDDMA, MDEA, MDMA methylene homolog), we consider that sample having met the service user's expectation.

Expected methamphetamine: For this graph, if drugs found were methamphetamine or methamphetamine and drugs similar to methamphetamine (dimethylamphetamine), we consider that sample having met the service user's expectation.

https://drugchecking.community/ accessed 8/8/26

Appendix 2

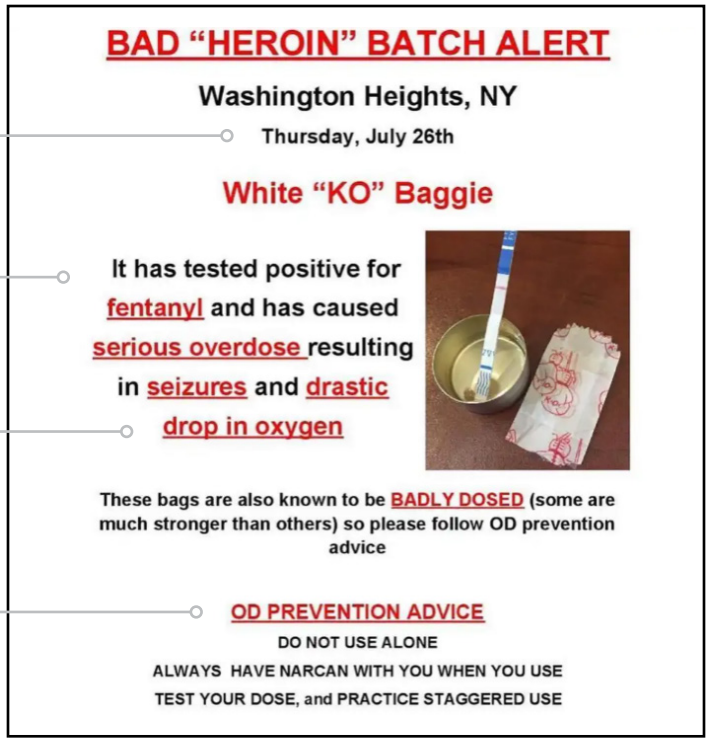
A social media post from Washington Heights Corner Project

Best practice:
Date and location of the data being shared is clear.

Short, clear language supports audience comprehension

Best practice:
A clear description of the substance and its physical or toxicological effects is provided.

Best practice:
Specific harm reduction strategies are outlined.



https://www.substanceusephilly.com/medetomidine, accessed 8/8/2025

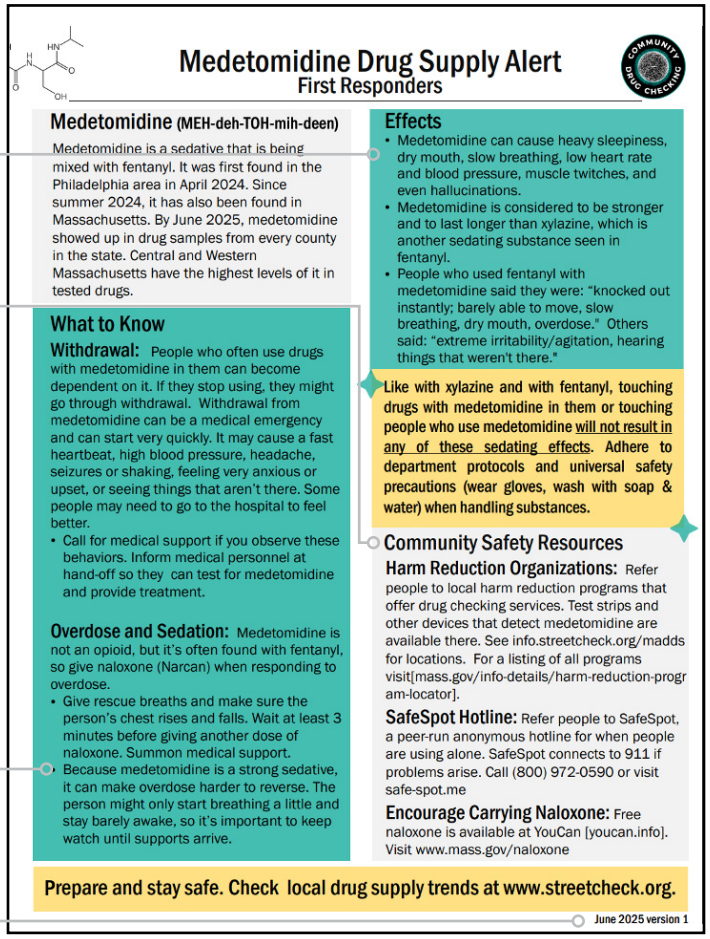
Drug Alert for First Responders from MADDS

Best practice:
A clear description of the substance and its physical or toxicological effects is provided.

Best practice:
Specific harm reduction strategies are outlined.

Messaging contains key information of special importance to first responders, especially EMS providing medical care

Best practice:
Date of the data being shared is clear.



https://www.info.streetcheck.org/_files/ugd/1817d1_cfa6ad442d5b48ff80da888b01236916.pdf 8/8/2025

Appendix 2

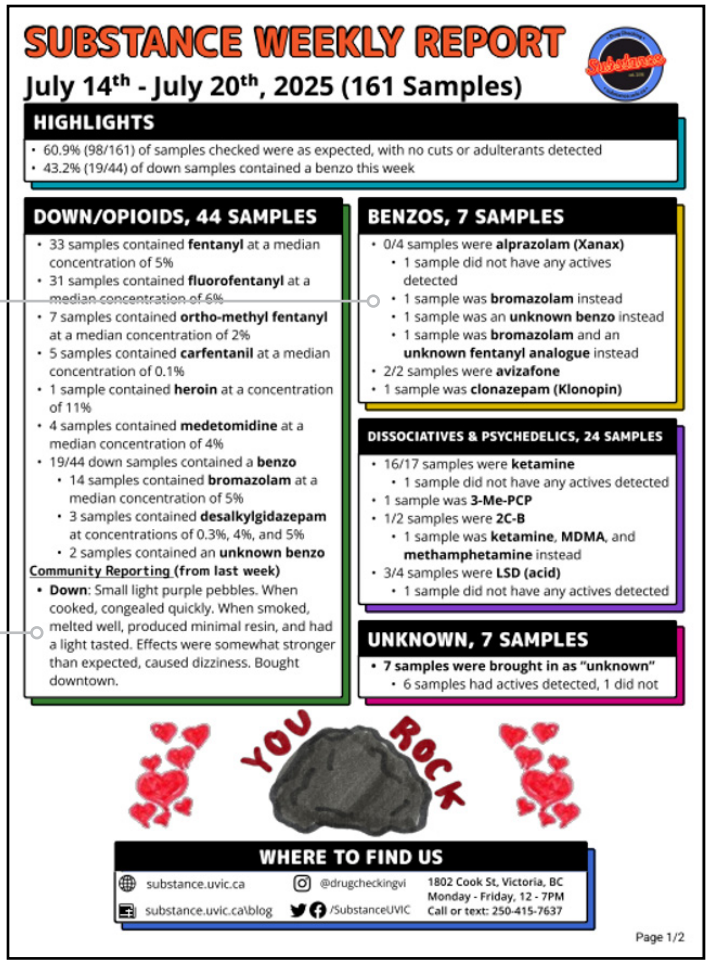
Results from Drug Checking Services at Substance (Vancouver, Canada)

Best practice:
Date and location of the data being shared is clear.

Best practice:
Describes data in terms of what drug samples were sold as or intended to be.

Short, clear language supports audience comprehension

Best practice:
A clear description of the substance and its physical or toxicological effects is provided.



SUBSTANCE WEEKLY REPORT

July 14th - July 20th, 2025 (161 Samples)

HIGHLIGHTS

- 60.9% (98/161) of samples checked were as expected, with no cuts or adulterants detected
- 43.2% (19/44) of down samples contained a benzo this week

DOWN/OPIOIDS, 44 SAMPLES

- 33 samples contained **fentanyl** at a median concentration of 5%
- 31 samples contained **fluorofentanyl** at a median concentration of 6%
- 7 samples contained **ortho-methyl fentanyl** at a median concentration of 2%
- 5 samples contained **carfentanil** at a median concentration of 0.1%
- 1 sample contained **heroin** at a concentration of 11%
- 4 samples contained **medetomidine** at a median concentration of 4%
- 19/44 down samples contained a **benzo**
  - 14 samples contained **bromazolam** at a median concentration of 5%
  - 3 samples contained **desalkylgidazepam** at concentrations of 0.3%, 4%, and 5%
  - 2 samples contained an **unknown benzo**

Community Reporting (from last week)

- **Down**: Small light purple pebbles. When cooked, congealed quickly. When smoked, melted well, produced minimal resin, and had a light tasted. Effects were somewhat stronger than expected, caused dizziness. Bought downtown.

BENZOS, 7 SAMPLES

- 0/4 samples were **alprazolam (Xanax)**
  - 1 sample did not have any actives detected
  - 1 sample was **bromazolam** instead
  - 1 sample was an **unknown benzo** instead
  - 1 sample was **bromazolam** and an **unknown fentanyl analogue** instead
- 2/2 samples were **avizafone**
- 1 sample was **clonazepam (Klonopin)**

DISSOCIATIVES & PSYCHEDELICS, 24 SAMPLES

- 16/17 samples were **ketamine**
  - 1 sample did not have any actives detected
- 1 sample was **3-Me-PCP**
- 1/2 samples were **2C-B**
  - 1 sample was **ketamine**, **MDMA**, and **methamphetamine** instead
- 3/4 samples were **LSD (acid)**
  - 1 sample did not have any actives detected

UNKNOWN, 7 SAMPLES

- **7 samples were brought in as "unknown"**
  - 6 samples had actives detected, 1 did not

YOU ROCK

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