EVALUATION PROFILE FOR

# Public Health Surveillance

## WITH PDMP DATA AND PUBLIC DISSEMINATION OF RESULTS

OVERDOSE DATA2ACTION

Centers for Disease Control and Prevention
National Center for Injury Prevention and Control

# Table of Contents


1. Purpose of the Evaluation Profile ..... 3
2. Public Health Surveillance with PDMP Data and Public Dissemination of Results ..... 5
   - → Logic Model ..... 7
3. Process Evaluations ..... 8
   - → Context ..... 9
   - → Reach ..... 10
   - → Dose Delivered or Received ..... 11
   - → Fidelity ..... 12
   - → Implementation ..... 13
   - → Individual-Level Change Outcomes ..... 15
   - → Community and System Change Outcomes ..... 16
   - → Unintended Outcomes ..... 17
   - → Morbidity and Mortality Outcomes ..... 18
- → Glossary ..... 19
- → References ..... 21
- → Endnotes ..... 22



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# Purpose of the Evaluation Profile

**This evaluation profile PROVIDES GUIDANCE in designing evaluations of public health surveillance with prescription drug monitoring program (PDMP) data and public dissemination of results.**

This resource is meant to demonstrate how to conduct evaluations, in many cases using existing programmatic data, to produce actionable and timely findings. These findings will be used to inform program managers and stakeholders about how well initiatives are being implemented, and how effective they are at bringing about desired outcomes. This profile provides guidance on the types of evaluation questions, indicators, data sources, and data collection methods that can be used to evaluate public health surveillance with prescription drug monitoring program (PDMP) data and public dissemination of results.

## EVALUATION CONSIDERATIONS

CDC funded entities[1] should tailor their evaluations to stakeholders' needs and the stage of development for each activity. Evaluations should serve programmatic needs to ensure high quality initiatives are developed, reach program goals, and are tested for effectiveness.

The evolving nature of drug overdoses requires that programs strategically pivot to address emerging needs. Evaluators should remain vigilant to changing needs and look for ways to provide practical and actionable information to program implementers and decision makers.[2] Decisions surrounding the level of rigor needed for a given evaluation should be weighed and balanced by the evaluation standards of utility, feasibility, propriety, and accuracy.[3] Examples are provided throughout the profiles to show where less rigorous, but potentially more accessible data (e.g., discussions with stakeholders, program recipient logs, meeting notes) may be useful in evaluations.

## CONTENT ORGANIZATION

The following items are included:

1. **Evaluation Profile**
   The profile is organized by process and outcome evaluation subcategories to demonstrate aspects that stakeholders may want to explore at various stages of an initiative's life cycle. Evaluations often touch upon multiple subcategories; therefore, a glossary is included to provide detailed information on each subcategory.

2. **Description and Logic Model**
   The description highlights core components of each activity, and the logic model shows expected outputs and outcomes. These may help implementers and evaluators see how their own activities or initiatives may be similar or differ from the ones presented.

# Public Health Surveillance with PDMP Data and Public Dissemination of Results

**Public health surveillance is a KEY PUBLIC HEALTH ACTIVITY that informs policy changes, guides program interventions, sharpens public communication, and helps agencies assess research investments.[B]**

Stakeholders monitor changes to drug overdose trends through surveillance to inform prevention and control efforts. State health departments use prescription drug monitoring program (PDMP) data and may use other data sources to provide a complete and accurate picture of overdose burden at county and state levels. Other overdose data sources that may be used include: emergency departments (ED), hospital discharge data (HDD), vital statistics, and emergency medical services (EMS), among others. Overdose surveillance data identifies risk factors, assess opportunities for intervention, informs targeting of resources, monitors progress toward goals. Surveillance systems can vary in quality; high quality systems are timely, representative, sensitive, and specific.

# Core components of this activity may include:

## 1. Linking PDMP data with overdose related data

- Identify indicators of local, state, and national importance to use in the surveillance system. These may include any conditions related to opioid use or misuse, not only acute overdose.
- Identify and secure access to needed data sources to include desired indicators in the surveillance system. This may require a gap analysis to determine which data are already being collected versus those that need to be secured.
- Link PDMP data to other opioid-related datasets: ED, HDD, Health Outcome, Vital Statistics, EMS, and others (e.g., foster care, justice-related data).
- Operationalize indicators by creating case definition guidance.
- Create a data collection and synthesis plan to ensure timely and accurate data integration.

## 2. Identifying disproportionately affected communities using surveillance data

- State and local health departments, community organizations, law enforcement officials, large health systems, and other stakeholders determine criteria to define those who are disproportionately affected[4] (e.g., by prescribing morbidity or mortality rates, naloxone administration, etc.).
- Determine indicators or factors for identifying disproportionately affected communities leveraging existing surveillance and refining, as necessary.
- Using appropriate surveillance data, create reports or geo maps to show communities that are identified as disproportionately affected.

## 3. Publicly disseminate the surveillance data

- Develop a dissemination plan and update the data management plan.[5]
  - i. Determine the intended audience(s) to disseminate aggregate data (e.g., policy makers, local health departments).
  - ii. Determine mechanism, level of access, and timing to disseminate data (e.g., reports, presentations, or data dashboards for partners).
- Provide education to the public on how to interpret/translate data.

LOGIC MODEL

# Public Health Surveillance with PDMP Data and Public Dissemination of Results

OVERDOSE DATA2ACTION

## INPUTS

### Data

PDMP, ED, HDD, vital records, and other opioid-related data

Understanding of policies surrounding data sharing and use for surveillance purposes (e.g., Data Management Plan[a])

### Partnership

Established relationships with internal health department staff from IT, communications, vital records and external stakeholders like: local health departments, health systems, licensing boards, media, coalitions, and others

### Resources

Epidemiologic, IT, and communications staff

IT infrastructure to support storage and synthesis of large data sets

Communications infrastructure to disseminate and respond to requests about surveillance reports and materials

## ACTIVITIES

### Link PDMP and Overdose Data

Identify indicators of importance and secure access to data

Link PDMP data to other opioid-related data sets

Develop indicator guidance and create and implement data collection plan

### Identify Disproportionately Affected Communities

Stakeholders determine criteria to define the disproportionately affected

Determine indicators or factors to identify disproportionately affected communities using surveillance data and report results

### Publicly Disseminate Data

Develop a dissemination plan by determining intended audience(s) and the mechanism and timing for dissemination

Provide education to the public on how to interpret/translate data

## OUTPUTS

### Linked Data

Established data agreements and protocols for data synthesis

Enriched opioid datasets with prescribing, ED, vital records, and other data sources

Data synthesis plan created and ready for implementation

### Disproportionately Affected Communities

Definition for disproportionately affected communities, as well as indicators and factors for identifying disproportionately affected communities

### Publicly Disseminate Data

Established mechanism and schedule to disseminate aggregate data

Guidance materials to assist with translation of surveillance data

Relationships established with stakeholders to promote dissemination and use of opioid data

Data available to the public on an ongoing basis

## SHORT-TERM OUTCOME

### System and Partners

Increased accessibility of PDMP and other opioid-related data

Timely and periodic dissemination of PDMP and other opioid-related data

Increased understanding of disproportionately affected communities within a jurisdiction

### Individual-Level

Increased knowledge of opioid prescribing, mortality and morbidity trends in state, local, and disproportionately affected communities

Increased ability for health officials and stakeholders to respond to trends and emerging incidents

## INTERMEDIATE-TERM OUTCOME

### Systems Outcome

Expanded uptake and use of practice and evidence-based initiatives[b]

Greater targeting of resources to address prescribing and opioid overdose burden in the jurisdiction

## LONG-TERM OUTCOME

### Morbidity

Decreased rate of opioid misuse, opioid use disorder, or non-fatal overdose

### Mortality

Decreased drug overdose death rate, including prescription and illicit opioid overdose death rates

[a] CDC requires recipients who collect or generate data with federal funds to develop, submit, and comply with a data management plan (DMP) for each collection or generation of public health data undertaken as part of the award and, to the extent appropriate, provide access to and archiving/long-term preservation of collected or generated data. For more information please see CDC's DMP policy.

[b] See Evidence-Based Strategies for Preventing Opioid Overdose: What's Working in the United States.

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# 3 Process Evaluations

**Process evaluations DOCUMENT AND DESCRIBE HOW A PROGRAM IS IMPLEMENTED. They normally occur when programs or initiatives are early in their development and are based on stakeholders' needs.[D]**

# Context

## Evaluation Question

**What factors influence the use of PDMP data in overdose surveillance?**

## Sample Indicators

**Link PDMP data**

- Description of state-level policies related to PDMP data for public health surveillance
- Description of state statutes and policies related to sharing and use of the PDMP data for public health surveillance
- Descriptions of state PDMP and opioid-related data (e.g., simplicity, flexibility, data quality, acceptability, sensitivity, predictive value positive, representativeness, timeliness, and stability)[6]
- Description disproportionately affected populations in jurisdiction[7]
- Description of changes to indicators/analysis based on updated best practices (e.g., CDC recommendations regarding if/how to include/exclude buprenorphine medication for opioid use disorder [MOUD]; *CDC Guideline for Prescribing Opioids for Chronic Pain*)

### DATA SOURCES

- State policies
- Organizational policies
- Stakeholders
- Opioid-related data sets (PDMP, ED, HDD, etc.)

### DATA COLLECTION METHODS

- Environmental scan, informal interviews, or surveys with stakeholders exploring:
  - data sources
  - methods of dissemination
  - frequency of dissemination
  - intended audience(s) of data dissemination
  - completeness of data
- Interviews with stakeholders exploring data availability to particular counties and communities and not others (inclusion/exclusion criteria)
- Asset mapping (e.g., doctor offices, pharmacies, naloxone recovery services, MOUD centers, etc.)
- Case studies across time periods highlighting changes

# Reach

## Evaluation Question

**To what extent have PDMP or other opioid-related surveillance data been made available to stakeholders (e.g., via website or email distribution )?[8]**

## Sample Indicators

**Publicly disseminate data**

- Number of unique visitors to website
- Number of people participating in data-use community forums or discussions
- Proportion of county/city health departments receiving the reports
- Number of reports distributed and number tailored for stakeholders
- Number of stakeholders and type of sectors[9] represented on an email distribution list (e.g., inclusion of stakeholders from disproportionately affected or vulnerable populations, decision makers)

### DATA SOURCES

- Administrative data (e.g., website analytics, meeting attendance records, email distribution list, etc.)
- Stakeholders

### DATA COLLECTION METHODS

- Environmental scan of data dissemination routes per dataset and/or intended audience(s)
- Stakeholder engagement (e.g., informal conversations, survey, or scan of administrative data) to identify gaps

# Dose Delivered or Received

## Evaluation Question

**To what extent have stakeholders reviewed PDMP or other opioid-related surveillance data (e.g., stakeholders downloading the report from a website)?**

## Sample Indicators

**Publicly disseminate data**

- Changes to the frequency of data dissemination
- Changes to the methods of data dissemination (e.g., surveillance report, data dashboard, de-identified datasets, etc.)
- Descriptions of use by stakeholders of the surveillance data received
- Number of downloads per web product

### DATA SOURCES

- Administrative data (e.g., website analytics, distribution records)
- Stakeholders

### DATA COLLECTION METHODS

- Stakeholder conversations or meeting notes
- Document review of data dissemination frequency and methods

# Fidelity

There may be circumstances in which strict fidelity to the original plan may actually work against an intended outcome. In this case, adaptation is necessary and expected. Tracking fidelity and purposeful/data-informed deviations is important to understand implementation; however, strict fidelity should not supersede necessary adaptations that will facilitate outcomes.

## Evaluation Questions

**To what extent was public health surveillance conducted using PDMP data and publicly disseminated as originally planned?**

## Sample Indicators

**Link PDMP data**

- Percentage of intended data sets included in the surveillance reports
- Percentage of intended data linkages made
- Description of changes made to the intended plan for public health surveillance with PDMP and other opioid-related data (e.g., data access, technology capacity, funding, staff capacity, and methods of dissemination)

### DATA SOURCES

- Administrative data (e.g., original work plan/activity description, website analytics, distribution records, MOAs/MOUs, etc.)
- Stakeholders

### DATA COLLECTION METHODS

- Document review of administrative data
- Stakeholder conversations regarding fidelity to data sources, data linkages, and data dissemination methods

# Implementation

## Evaluation Questions

**How, and to what extent, was public health surveillance conducted with the PDMP and disseminated publicly?**

**How, and to what extent, were disproportionately affected communities identified and confirmed by stakeholders?**

**How well does the strategy to identify disproportionately affected communities succeed in identifying disproportionately affected communities?**

**How, and to what extent, does this surveillance system offer stakeholders' high quality, useful, and timely data about the overdose crisis?**

**How useful are the surveillance dissemination methods to stakeholders?**

**What lessons were learned when analyzing and disseminating data publicly?**

## Sample Indicators

**Link PDMP data**

- → Description of how surveillance was conducted and disseminated publicly
- → Description of quality in terms of simplicity, flexibility, data quality, acceptability, sensitivity, predictive value positive, representativeness, timeliness, and stability[10]
- → Descriptions of innovations regarding data access
- → Descriptions of the timeliness of data analysis and reporting for the surveillance system

**Identify disproportionately affected communities**

- → Description of how disproportionately affected communities were identified and satisfactoriness to stakeholders (e.g., validity)

### DATA SOURCES

- Administrative data (e.g., website analytics, distribution records, Memorandum of Agreement (MOA)/Memorandum of Understanding (MOU), meeting notes, etc.)
- Project personnel
- Opioid-related data sets (PDMP, ED, HDD, etc.)
- Stakeholders

### DATA COLLECTION METHODS

- Document review of meeting notes or records showing data dissemination (e.g., reports or website)
- Conversations with stakeholders and/or program staff

**Publicly disseminate data**

- Descriptions of feasibility in terms of data access, technology capacity, funding, staff capacity, and methods of dissemination
- Description of usefulness of the surveillance reports to stakeholders and how the report was tailored for stakeholders' needs/perspectives
- Descriptions of the ease of use of the surveillance dissemination methods to stakeholders
- Descriptions of additional information, training, or guidance provided to stakeholders on surveillance data
- Descriptions of barriers, facilitators, and lessons learned in creating, disseminating, and using surveillance data
- Description of innovations regarding data dissemination and use

# Individual-Level Change Outcomes

## Evaluation Question

**For whom, and in what ways, did knowledge, skills, or behaviors change based on the availability of publicly disseminated PDMP surveillance data?**

## Sample Indicators

**Short-Term**

- → Changes in knowledge and attitudes of stakeholders based on surveillance data
- → Changes in ability for stakeholders to respond to trends (e.g., deploy or target resources)
- → Changes in stakeholders' knowledge of practice or evidence-based activities to address burden

### DATA SOURCE

- Stakeholders

### DATA COLLECTION METHODS

- Document review of meeting notes, work plans, health system, or law enforcement policy changes, etc.
- Informal discussion with project staff and/or stakeholders
- Interviews/surveys with stakeholders

# Community and System Change Outcomes

## Evaluation Question

**In what ways did community organizations or systems change based on the availability of publicly disseminated PDMP surveillance data?**

## Sample Indicators

**Short-Term**

- Descriptions of changes to the timeliness and periodicity of PDMP surveillance data
- Descriptions of changes to data sets used in surveillance activities
- Description of changes within identified disproportionately affected communities (e.g., new partnerships, programs, systems, or policies)
- Descriptions of changes to partnerships, programs, systems or policies based on availability of surveillance data (e.g., development of opioid response teams, or development of readiness plans to respond to overdose spikes or emerging trends)

**Intermediate-Term**

- Descriptions of implementation/expansion of practice and evidence-based initiatives within partner organizations or community/regional/state systems
- Descriptions of changes to resources allocated to disproportionately affected communities in the state (e.g., percent change in financial resource allocated)

### DATA SOURCES

- Administrative data
- Stakeholders

### DATA COLLECTION METHODS

- Document review of meeting notes, work plans, health system, or law enforcement policy changes, etc.
- Informal discussion, interviews, or surveys with project staff and/or stakeholders

# Unintended Outcomes

## Evaluation Question

**What unintended outcomes (positive and negative) were produced?**

## Sample Indicators

**Long-Term**

- Descriptions of both positive and negative unintended outcomes (positive/negative) (e.g., positive outcomes, such as receipt of additional funding to address burden, or negative outcomes, such as further stigmatization of disproportionately affected populations/communities)

### DATA SOURCES

- Administrative data
- Stakeholders

### DATA COLLECTION METHODS

- Document review of meeting notes, work plans, health system, or law enforcement policy changes, etc.
- Informal discussion with project staff and/or stakeholders

# Morbidity and Mortality Outcomes

## Evaluation Question

**How were mortality and morbidity rates ultimately impacted by targeted actions, which were made possible by PDMP-informed surveillance?**

## Long-Term Sample Indicators

**Number and percentage changes in morbidity and mortality indicators**

**Morbidity**

- Patients receiving multiple naloxone administrations (MNAs) from emergency medical services (EMS)
- Patients transported to the emergency department (ED) for overdose by EMS where primary impression recorded in National Emergency Medical Services Information System (NEMSIS) is drug overdoses
- Patients refusing transport by EMS where primary impression recorded in NEMSIS is drug overdoses
- EMS calls where naloxone was administered
- All-drug non-fatal overdose emergency department visits
- Emergency department visits involving non-fatal opioid overdose, excluding heroin
- Emergency department visits involving non-fatal heroin overdose with or without other opioids
- All-drug non-fatal overdose hospitalizations
- Hospitalizations involving non-fatal opioid overdose, excluding heroin
- Hospitalizations involving non-fatal heroin overdose, with or without other opioids

**Mortality**

All drug overdose deaths

- Drug overdose deaths involving opioids
- Drug overdose deaths involving prescription opioids
- Drug overdose deaths involving heroin
- Drug overdose deaths involving synthetic opioids other than methadone

### DATA SOURCES

- Jurisdictional mortality and morbidity data
- ED/health department morbidity and mortality data
- CDC WONDER
- National Emergency Medical Services Information System (NEMSIS) and/or local EMS data
- PDMP data
- Private data sources (e.g., IQVIA, hospital discharge/billing)
- Local syndromic surveillance systems
- SUDORS
- BioSense

### DATA COLLECTION METHODS

- Reviews of jurisdictional reports (e.g., annual progress reports)
- Secondary data analysis
- Review of opioid-related morbidity and mortality data dashboards or reports

# Glossary

**Data management plan** CDC requires awardees for projects that involve the collection or generation of data with federal funds to develop, submit, and comply with a data management plan (DMP) for each collection or generation of public health data undertaken as part of the award and, to the extent appropriate, provide access to and archiving/long-term preservation of collected, or generated data. The DMP describes the data to be collected or generated in the proposed project; standards to be used for collected or generated data; mechanisms for providing access to and sharing of the data (including provisions for the protection of privacy, confidentiality, security, intellectual property, or other rights); plans to share data with CDC that meet CDC reporting and surveillance requirements; use of data standards that ensure all released data have appropriate documentation that describes the method of collection, what the data represent, and potential limitations for use; and plans for archival and long-term preservation of the data, or explaining why long-term preservation and access are not justified. Recipients will be required to submit a more detailed DMP within the first six months of award. For more information, please see CDC's DMP policy.

**Data quality** reflects the completeness and validity of the data recorded in the public health surveillance system. Quality of data is influenced by the performance of the screening and diagnostic tests (i.e., the case definition) for the health-related event, the clarity of hardcopy or electronic surveillance forms, the quality of training and supervision of persons who complete these surveillance forms, and the care exercised in data management. A review of these facets of a public health surveillance system provides an indirect measure of data quality.[A]

**Environmental scan** is a research effort to review existing resources, research, practices, or policies to understand the current landscape of information and activities about a health issue.

**Evidence/practice-based** describes interventions or practices that have been developed based on high-quality research, professional experiences, and opinions of experts in the field. Practice-based interventions may reflect the preferences, priorities, and values of those who will receive, or be affected by, the interventions or practices.

**Flexibility** is probably best evaluated retrospectively by observing how a system has responded to a new demand. A flexible public health surveillance system can adapt to changing information needs, or operating conditions with little additional time, personnel, or allocated funds. For example, flexible systems can accommodate new health-related events, changes in case definitions or technology, and variations in funding or reporting sources. In addition, systems that use standard data formats (e.g., in electronic data interchange) can be easily integrated with other systems, and thus might be considered flexible.[A]

**Formative research** is also referred to as formative evaluation research, or market research. It describes the early phase of evaluation that involves collecting data to design, plan, and develop a media campaign. Formative research for media campaigns often has two stages: pre-production research and pre-testing/production testing. Formative research helps inform the activities shown in the logic model.

**Outcome evaluations** assess progress on the sequence of outcomes (e.g., short-, intermediate-, and long-term) the intervention aims to achieve. Outcome evaluations normally occur when an intervention is established, and it is plausible to expect changes in a given timeframe. They should be planned from the beginning of an intervention, as they often rely on baseline data that need to be collected before the intervention starts.[D] Outcome evaluations may examine the following areas:

- **Individual-Level Outcomes:** The extent to which the intervention has affected changes in a given audience's knowledge, skills, attitudes, intentions, efficacy, and/or behaviors.
- **Community and System Change Outcomes:** The extent to which the intervention has affected changes in a community, organization, or system(s).
- **Unintended Outcomes:** The extent to which the intervention had unplanned or unanticipated effects—either positive or negative.
- **Morbidity/Mortality Outcomes:** The extent to which the intervention has affected changes in target audience's morbidity or mortality.

**Predictive value positive (PVP)** is the proportion of reported cases that actually have the health-related event under surveillance. In assessing PVP, primary emphasis is placed on the confirmation of cases reported through the surveillance system.[A]

**Process evaluations** document and describe how a program is implemented. Process evaluations normally occur when programs or initiatives are early in their development, and are based on stakeholders' needs.[C] Process evaluations may examine the following areas:

**Context:** Aspects of the larger social, political, and economic environment that may influence an activity's implementation.

**Reach:** The extent to which the intended target audience is exposed to, or participates in an activity. If there are multiple interventions, then *reach* describes the proportion that participates in each intervention or component.

**Doses delivered/received:** The number (or amount) of intended units of each intervention, or each component that is delivered or provided.

- **Dose delivered** is a function of efforts of the people who deliver the intervention. The extent to which the intervention staff member (e.g., academic detailers, educators, etc.) actively engaged with, interacted with, were receptive to, and/or delivered intervention materials and resources to the target audience.
- **Dose received** is a characteristic of the target audience, and it assesses the extent of engagement of participants with the intervention.

**Fidelity:** The extent to which the intervention is delivered as planned. It represents the quality and integrity of the intervention as conceived by the developers. (Note: In some circumstances, strict fidelity to the original plan may actually work against an intended outcome. In these cases, adaptation is necessary and expected. Tracking fidelity and purposeful/data-informed deviations is important to understand implementation; however, strict fidelity should not supersede necessary adaptations that will facilitate outcomes).

**Implementation:** The extent to which the intervention is feasible to implement and sustain, is acceptable to stakeholders, and is done with quality. Examination of these dimensions may also result in noted lessons learned, barriers, and facilitators that can help others when replicating similar initiatives.

**Representativeness** is assessed by comparing the characteristics of reported events to all such actual events. A public health surveillance system that is representative accurately describes the occurrence of a health-related event over time, and its distribution in the population by place and person.[A]

**Sensitivity** of a surveillance system can be considered on two levels. First, at the level of case reporting, sensitivity refers to the proportion of cases of a disease (or other health-related event) detected by the surveillance system. Second, sensitivity can refer to the ability to detect outbreaks, including the ability to monitor changes in the number of cases over time.[A]

**Simplicity** of a public health surveillance system refers to both its structure and ease of operation. Surveillance systems should be as simple as possible while still meeting their objectives.[A]

**Specificity** refers to the proportion of persons without the disease that are considered by the surveillance system as not having the disease. It is a measure of how infrequently a system detects false positive health events (i.e., the number of individuals identified by the system as not being diseased divided by the total number of all persons who do not have the disease). Very low specificity would result in the surveillance system indicating many "false" outbreaks, and the staff spending a lot of resources to verify and investigate.[11]

**Stability** refers to the reliability (i.e., the ability to collect, manage, and provide data properly without failure) and availability (the ability to be operational when it is needed) of the public health surveillance system.[A]

**Technical assistance** refers to the process of providing targeted support to an organization with a development need or problem. It is an effective method for building the capacity of an organization.

**Timeliness** reflects the speed between steps in a public health surveillance system. The timeliness of a public health surveillance system should be evaluated in terms of availability of information for control of a health-related event, including immediate control efforts, prevention of continued exposure, or program planning.[A]

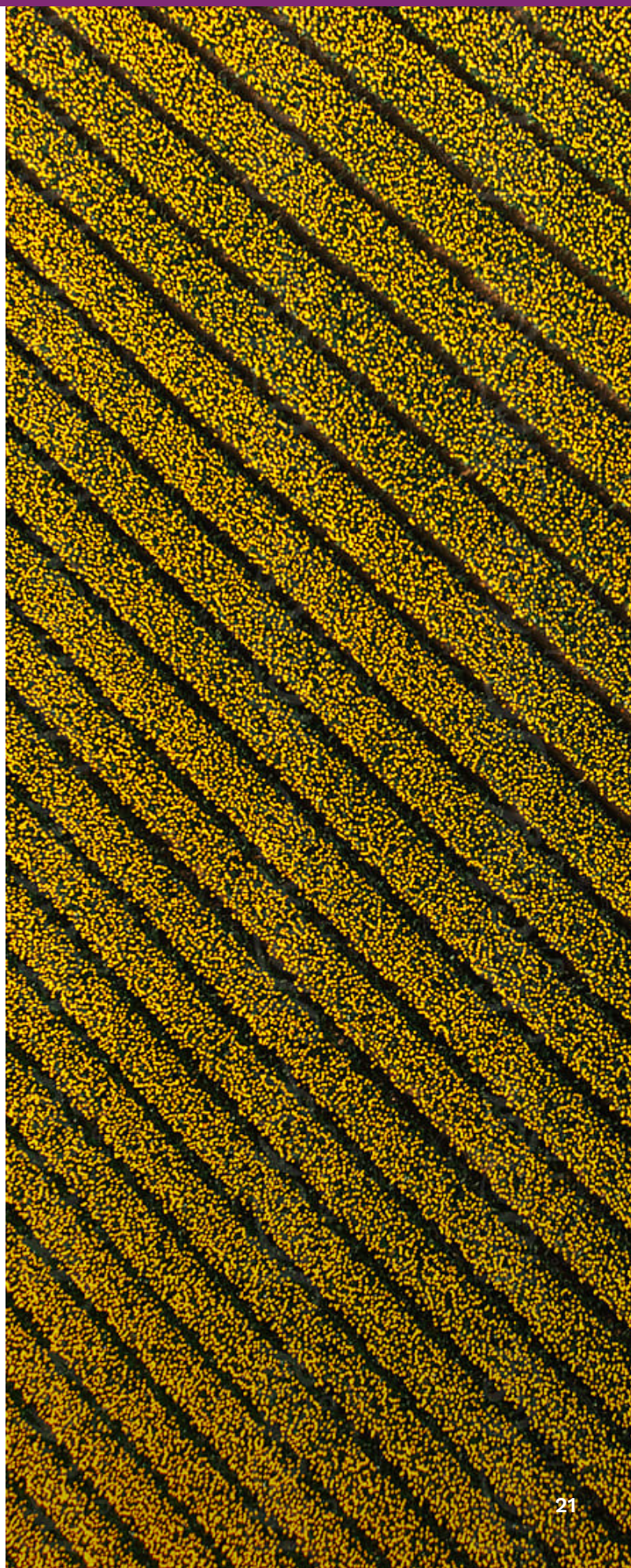
# References


[A] German, R. R., Lee, L. M., Horan, J., Milstein, R., Pertowski, C., & Waller, M. (2001). Updated guidelines for evaluating public health surveillance systems. *MMWR Recomm Rep, 50*(1-35). https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5013a1.htm

[B] Office of Public Health Scientific Services. CDC Public Health Surveillance Strategy Report: 2014–2018. Atlanta, GA: Centers for Disease Control and Prevention; September 2018.

[C] Rossi, PH., Lipsey, MW., & Freeman, HE. Measuring and Monitoring Program Outcomes. In: Rossi, PH., Lipsey, MW., & Freeman, HE. *Evaluation a Systematic Approach*. 7. Thousand Oaks, CA: Sage Publications; 2004.

[D] Steckler, A., & Linnan, L. Process evaluation for public health interventions and research: An overview. In: A. Steckler & L. Linnan (Eds.), *Process Evaluation for Public Health Interventions and Research.* San Francisco, CA: Jossey-Bass; 2002.

# Endnotes

[1] Recipients can be state, district, county, or city health departments, tribal health organizations, or other bona fide agents of the health department.

[2] See Improving the Use of Program Evaluation for Maximum Health Impact: Guidelines and Recommendations for more information on how large programs use evaluation findings to improve their interventions and inform strategic direction. Furthermore, evaluation approaches like developmental evaluation or rapid feedback evaluations may be helpful models for evaluators to use while working on overdose prevention efforts.

[3] CDC Evaluation Standards: https://www.cdc.gov/eval/standards/index.htm

[4] Health departments and their stakeholders should determine their criteria to define disproportionately affected communities. Disproportionately affected communities may be regions with high rates of prescribing, morbidity or mortality, naloxone administration or a combination of these data points and/or other non-public health data points. Disproportionately affected populations may include people with opioid use disorder (OUD), justice-involved populations, disproportionately affected populations (e.g., African Americans, Native American/American Indian, pregnant women, seniors, people who lack access to health insurance) or those who experience high rates of opioid prescribing, morbidity, mortality, or naloxone administration.

[5] CDC requires recipients who collect or generate data with federal funds to develop, submit, and comply with a Data Management Plan (DMP) for each collection or generation of public health data undertaken as part of the award and, to the extent appropriate, provide access to and archiving/long-term preservation of collected or generated data. For more information, please see CDC's DMP policy.

[6] German, R. R., Lee, L. M., Horan, J., Milstein, R., Pertowski, C., & Waller, M. (2001). Updated guidelines for evaluating public health surveillance systems. MMWR Recomm Rep, 50(1-35). https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5013a1.htm

[7] Disproportionately affected populations may include people with opioid use disorder (OUD), justice-involved populations, disproportionately affected populations (e.g., African Americans, Native American/American Indian, pregnant women, seniors, people who lack access to health insurance) or those who experience high rates of opioid prescribing, morbidity, mortality, or naloxone administration.

[8] In the above referenced, MMWR options mentioned for dissemination of public health surveillance include: "electronic data interchange; public-use data files; the Internet; press releases; newsletters; bulletins; annual and other types of reports; publication in scientific, peer-reviewed journals; and poster and oral presentations, including those at individual, community, and professional meetings. The audiences for health data and information can include public health practitioners, healthcare providers, members of affected communities, professional and voluntary organizations, policymakers, the press, and the general public."

[9] Sectors include public health departments, public safety, healthcare providers, community-based organizations, legislators, people affected by OUD, and others. Disproportionately affected populations may include people with opioid use disorder (OUD), justice-involved populations, disproportionately affected populations (e.g., African Americans, Native American/American Indian, pregnant women, seniors, people who lack access to health insurance) or those who experience high rates of opioid prescribing, morbidity, mortality, or naloxone administration.

[10] German, R. R., Lee, L. M., Horan, J., Milstein, R., Pertowski, C., & Waller, M. (2001). Updated guidelines for evaluating public health surveillance systems. *MMWR Recomm Rep, 50*(1-35). https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5013a1.htm

[11] World Health Organization. (2006). Communicable disease surveillance and response systems. *Guide to monitoring and evaluating. Geneva: World Health Organization.*