CDC's Overdose Prevention Evaluation Profile for

Academic Detailing

This Evaluation Profile provides guidance to support CDC's funded entities[1] in designing evaluations of their Academic Detailing efforts. The profiles are meant to demonstrate how evaluations can be conducted, in many cases using existing programmatic data, to produce actionable and timely findings to inform program managers and stakeholders about how well initiatives are being implemented and how effective they are at bringing about desired outcomes. Each profile provides guidance on the types of evaluation questions, indicators, data sources, and data collection methods that may be used to evaluate a given prevention activity. The toolkit includes evaluation profiles for the following prevention activities:

CDC funded entities are expected to tailor their evaluations to stakeholder needs and the stage of development for each activity. Evaluations should serve programmatic needs to ensure high-quality initiatives are developed, are reaching program goals, and are tested for effectiveness.

The evolving nature of drug overdose 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.

CDC will release additional evaluation profiles in early 2020. These profiles will cover the following initiatives:

1. Linkage to care initiatives
2. Technical assistance to high burden communities
3. Naloxone distribution programs
4. Overdose communications campaigns
5. Use of PDMP data to inform clinical practice and improve patient safety

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[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 maybe helpful models for evaluators to use while working on overdose prevention efforts.

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

Evaluation Profile: Academic Detailing

Academic detailing (AD) is a form of clinician education that uses a one-on-one interactive technique to deliver unbiased, evidence-based information to clinicians with the goal of affecting behavior change. According to the National Resource Center for Academic Detailing, individual sessions delivered by trained detailers provide clinicians with custom-tailored resources that are relevant to their daily practice, helping them to improve patient care (Soumerai, S. B., & Avorn, J. L., 1990). Based on the principles of social marketing and behavior change theory, the AD model can be adapted for specific situations (Sheffer, MA et al. 2012; Soumerai, S. B., & Avorn, J. L., 1990). Sessions can range in length and frequency depending on the clinician's availability and the behavior changes sought. Detailers deliver action-based "key messages"; in the context of opioid safety, for example, a session might focus on delivering key messages about using non-opioid alternatives to manage pain, checking the state prescription drug monitoring program (PDMP), or co-prescribing naloxone with opioids. Follow-up visits allow academic detailers to assess how changes are being implemented, reinforce key messages, and address new concerns or additional topics. Between visits, detailers may also use phone, email, or in-person communication to follow-up with clinicians about content covered during the detailing session and additional detailing topics.

Core components of this activity may include:

1. **Planning for AD Program**
    - Identify intended audience (e.g., doctors, nurses, dentists, pharmacists, health systems) or region via baseline data (e.g., prescribing data, PDMP reports)
    - Develop or refine key messages based on program and population needs or policy changes (e.g., optimizing non-opioid therapies, increasing medication-assisted treatment (MAT), becoming a buprenorphine waivered physician, decreasing opioid prescribing, reducing stigma surrounding opioid use disorder (OUD), checking the PDMP)[4]
    - Recruit and train detailers[5]
    - Identify and develop primary materials to support key message delivery and additional relevant educational materials to facilitate detailing sessions (e.g., pocket cards)
    - Set detailing goals (e.g., number of targeted clinicians, number of detailing sessions)
2. **Implementing AD**
    - Schedule initial sessions with identified clinicians[6]
    - Deliver key messages tailored to a clinician's specific needs, and set behavior change goals
    - Follow up on the key messages, and discuss behavior changes, as needed
    - Continue to provide additional sessions/resources, as needed

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[4]AD key messages can be developed to cover a variety of topics based on changes to licensing board requirements, changes in trend data, changes in the needs of the program or population, changes to the PDMP, prescribing policy changes in a given jurisdiction or health system/payer, needs assessments of clinicians or patients (e.g., with substance use disorder or chronic pain), etc.

[5] Ideal candidates to complete the training and become successful academic detailers have a background in healthcare (e.g., nurses, pharmacists, clinicians) or public health (e.g., health department staff, public health specialists, health educators), are familiar with the topic area and the community in which the detailing takes place, and exhibit excellent communication and interpersonal skills.

[6] Depending on program resources and staffing, scheduling of visits may be done directly by academic detailers or may be done by other program personnel.

- Collect data on all detailing visits to support monitoring and evaluation (e.g., data may include number of clinicians targeted, number of visits, length of sessions, content discussed, challenges/barriers, behavior change)

3. **Monitoring and Evaluating AD**
    - Monitor program for improvement, and identify potential changes and outcomes (e.g., prescribing data, discussions with detailers)
    - Share evaluation findings with stakeholders[7]
    - Reassess focus of academic detailing program based on evaluation findings (e.g., key messages, region, or clinician group)

A logic model designed to enhance the evaluation process is provided in a separate file.

Please note that specific evaluation questions, sample indicators, possible data sources, and possible data collection methods are listed in the table below.

[7] Stakeholders may include clinicians, healthcare payers, healthcare systems, quality improvement coordinators, licensing boards, professional healthcare associations, medical schools, regional coalitions, and patients and/or their caregivers. Stakeholders are a broader group than collaborating partners. Collaborating partners are those who may be actively engaged with implementing the AD initiative.

Process Sub-categories	Evaluation Questions	Sample Indicators	Data Source	Data Collection Methods
Context	What is the overdose and/or opioid misuse burden in the jurisdiction? How are high risk and vulnerable populations[8] characterized within jurisdiction? What factors impact the opportunities for clinicians[9] to participate in AD sessions in your jurisdiction?	**Resources** • Description of laws or policies relevant to opioid misuse and/or overdose in the jurisdiction (e.g., PDMP use, prescribing guidelines, health systems/payers policies) • Description of the current best practices promoted for clinicians in the jurisdiction on opioid prescribing • Description of current education opportunities provided in the jurisdiction for clinicians (e.g., other academic detailing programs, grand rounds, continuing education, professional development opportunities from licensing boards or professional associations, healthcare conferences, etc.) **Partnerships** • Description of potential partners,[10] their ability to collaborate and assist with AD implementation or offer complementary activities (e.g., existing data use agreements) • Description of collaboration plan outlining how partners will support or complement AD activities in their jurisdiction **Data**[11] • Description of clinician needs relevant AD topics, supplemental materials, availability for AD, and ongoing education • Description of high risk and vulnerable population's needs • Description of patient needs (e.g., chronic pain patients, patients with OUD)	• Jurisdictional policies (e.g., prescribing, licensing boards, PDMP, health payers) • Vital statistics data • PDMP data • Stakeholders • Administrative data for previous/existing clinician education • Private data sources (e.g. IQVIA, hospital discharge/billing) • NEMSIS and/or jurisdiction's EMS data • Local syndromic surveillance systems • SUDORS • BioSense	• Environmental scan • Focus groups, interviews, or surveys of clinicians, patient groups, etc.

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

[9] Clinicians can include medical, dental, or pharmacy practitioners.

[10] Potential partners may include local or jurisdictional partners (e.g., coalitions, harm reduction, health systems and payers), schools of medicine (pharmacy or nursing), professional licensing boards or associations, and academic detailing experts or consultants.

[11] 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, to provide access to and archiving/long-term preservation of collected or generated data. For more information, please see CDC's DMP policy https://www.cdc.gov/grants/additionalrequirements/ar-25.html.

		• Descriptions of drug use and misuse trends (e.g., prescription and illicit), prescribing data from PDMP, and overdose trends and populations most affected[12] **Prescribing**[13] • Total number of opioid prescriptions per clinician reported monthly or quarterly • Percentage of opioid prescriptions per clinician[14] • Average number of opioid prescriptions per month or quarter • Average morphine milligram equivalent (MME) per patient[15] • Average MME/day per prescription* • Percentage of patients receiving more than an average daily dose of ≥90 MME of opioids (PDMP measure) • Average days' supply per opioid prescription* • Percentage of patients with overlapping opioid and benzodiazepine prescriptions* **For misuse**[16] • Number of opioid overlap, defined as opioid prescriptions that overlap by 7 or more days (including early refills) • Number of opioid and benzodiazepine overlap, defined as opioid and benzodiazepine prescriptions that overlap by 7 or more days • Number of long acting/extended release (LA/ER) opioid prescriptions written for acute pain conditions; LA/ER for opioid naïve patients • Number of high daily opioid dosage, defined as a prescribed daily dose of 90 MME or greater • Number of multiple provider episodes (MPE)[17] *Overdose burden* **Morbidity**		

[12] Stratified by subpopulation (e.g., race/ethnicity, age, etc.) when relevant and data are available.

[13] Prescribing metrics listed here are commonly reported within state PDMPs. For more information, see http://www.pdmpassist.org/pdf/PDMP_admin/Report_Card_TAG_20170217_revised_final.pdf

[14] Percentage of opioid prescriptions can be displayed in PDMPs as an average of a clinician's patients receiving opioids and an average of opioid prescriptions written by a given clinician. These percentages may also be displayed based on MME dosage, such as 0-50, 51-90, 91-200, & > 200.

[15] For more information about these measures, see Bohnert, A. S., Guy, G. P., & Losby, J. L. (2018). *Other measures listed are also from this same article.

[16] Misuse measures from (Liu, Y., et al., 2013) have been updated to align with the CDC Opioid Prescribing Guideline.

[17] A multiple provider episode (MPE) is an instance in which a patient fills a prescription from five or more prescribers at five or more pharmacies for drugs of a particular class within a 6-month period (Paulozzi, L. J., Strickler, G. K., Kreiner, P. W., & Koris, C. M., 2015).

		• Number of patients receiving multiple naloxone administrations (MNAs) from emergency medical services (EMS) • Number of patients transported to emergency department (ED by EMS) where primary impression recorded in NEMSIS is drug overdose • Number of patients refusing transport by EMS where primary impression recorded in NEMSIS is drug overdose • Number of EMS calls where naloxone was administered • Number of nonfatal ED visits involving nonfatal overdose, all drugs • Number of ED visits involving nonfatal opioid overdose, excluding heroin • Number of ED visits involving nonfatal heroin overdose, with or without other opioids • Number of Hospitalizations involving nonfatal overdose, all drugs • Number of Hospitalizations involving nonfatal opioid overdose, excluding heroin • Number of Hospitalizations involving nonfatal heroin overdose, with or without other opioids **Mortality** • Number of drug overdose deaths involving opioids • Number of drug overdose deaths involving natural, semi-synthetic, and synthetic opioids • Number of drug overdose deaths involving prescription opioid pain relievers: natural and semi-synthetic opioids and methadone • Number of drug overdose deaths involving natural and semi-synthetic opioids • Number of drug overdose deaths involving synthetic opioids other than methadone • Number of drug overdose deaths involving methadone • Number of drug overdose deaths involving heroin		

Process Sub-categories	Evaluation Questions	Sample Indicators	Data Source	Data Collection Methods
Reach	How many clinicians were reached through academic detailing?	**Planning** • Number of academic detailers trained • Number of partners collaborating with AD initiative (e.g., offering AD or complementary education initiatives in their organization, clinic/practice, etc.) **Implementation** • Total number of potential clinicians to be reached by AD program • Number and percentage of clinicians detailed, percentage from within intended audience (e.g., clinician specialty, health system, or region) • Number of AD sessions conducted per clinician (including initial contact and follow-ups) • Number of supplemental materials distributed	• AD logs or records on initial visit reports and follow-up visits[18] • Stakeholders and collaborating partners	• Document review of administrative records or monitoring data • Discussions with stakeholders and/or collaborating partners
Doses Delivered/Received	To what extent did the intended clinicians receive AD sessions?	**Implementation** • Average length of AD session conducted with intended audience, health system, or region • Number and description of the topics covered in AD sessions, including follow-up sessions • Number of clinicians who received a follow-up academic detailing session • Number of clinicians who received multiple AD follow-up sessions • Number of additional contacts with clinicians who received detailing (e.g., phone calls, text messages, emails)	• Stakeholders (partners and detailers) • AD logs or records on initial visit reports and follow-up visits	• Document review of administrative records or monitoring data • Informal discussions with stakeholders (e.g., detailer peer learning groups)
Fidelity Note: 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 for understanding implementation; however, strict fidelity should not supersede necessary adaptations that will facilitate outcomes.	To what extent was the AD program adapted during implementation? Why was it adapted?	**Overall** • Description of changes/adaptations made to the AD program and the reasons behind the adaptation (e.g., intended audience, partnership collaborations, outreach approach)	• Administrative data (e.g., detailing logs or records, key messages/revisions) • Stakeholders (academic detailers, clinicians)	• Reviews of data and records • Informational phone calls with identified stakeholders • Clinician logs

[18] AD visit logs may track the clinician's name and practice; type of contact made; date, length, and content covered during detailing session; barriers the clinician disclosed; the clinician's current stage along a prescribing spectrum; next steps the detailer may take to progress the clinician along the spectrum; next steps for follow up; scheduling details; detailer impressions of the session, the practice, or clinician; resources provided; additional education or resource needs; etc.

Process Sub-categories	Evaluation Questions	Sample Indicators	Data Source	Data Collection Methods
Implementation	How feasible was it to implement the AD program given constraints of partners and clinicians? What barriers and facilitators were encountered during planning and implementation of the AD program? To what extent were AD efforts useful and timely? How was the overall quality? What lessons were learned?	**Overall** • Description of feasibility in terms of scheduling, resources, partners, and funding • Description of lessons learned through AD planning and implementation • Description of barriers and facilitators during planning and implementation **Planning** • Description of decision-making for targeting of resources, namely: o Identification of intended audience and program needs (e.g., data sources used to identify intended audience), and identification/recruitment of detailers o Development of key messages and learning objectives o Selection of supplemental materials and types developed • Description of training provided to detailers and ongoing support or training • Description of partner collaborative efforts (e.g., additional educational opportunities created based on AD program) **Implementation** • Description of overall quality of AD program implementation (e.g., reach, dose of intended audience, timeliness of follow-up, coordination with complementary activities, receptivity of clinicians to AD, etc.) *Clinicians* o Percentage of clinicians who reported detailing was of high quality[19] o Percentage of clinicians who demonstrated a willingness to continue engagement with AD or requested follow-up/additional contact[20] o Percentage of clinicians who reported detailing informed their clinical practice o Percentage of clinicians who set a behavior change goal *Detailers* o Description of detailers' experience providing detailing sessions (e.g., gaps in AD training curriculum, needs for additional supplemental materials, general reflections and impressions based on their detailing experience)	• Administrative data (e.g., detailing logs or records, key messages/revisions) • Stakeholders (academic detailers, clinicians)	• Informational interviews/surveys of partners, detailers, and/or clinicians

[19] The content of AD sessions was relevant/important to the clinician's practice; the resources and information received during AD sessions was useful to the clinician; detailer is seen as a trustworthy source of information; detailers were able to answer clinician's questions; detailers provided timely follow up sessions; materials were useful to clinician's daily practice.

[20] Follow-up AD visits or additional contact via telephone call, text message, or email.

Outcome Sub-categories	Evaluation questions	Sample Indicators	Data Source	Data Collection Methods
Individual-level Change Outcomes	For whom, and in what ways, did individual-level changes (e.g., knowledge, skills, intention, self-efficacy, behavior) occur based on AD sessions?	**Short-Term** *Clinicians* • Changes in clinician knowledge of AD key messages (e.g., knowledge of PDMP use, tapering options, co-prescribing of naloxone, OUD • Changes in clinician attitudes based on AD key messages (e.g., decreased stigma surrounding SUD) • Changes in clinician self-efficacy and intention to enact changes based on AD key messages **Intermediate-Term** *Clinician Prescribing*[21] Behavior changes made based on AD may include changes in[22]: • Total number of opioid prescriptions per clinician reported monthly or quarterly • Percentage of opioid prescriptions per clinician[23] • Average number of opioid prescriptions per month or quarter • Average (morphine milligram equivalent) MME per patient[24] • Average MME/day per prescription* • Percentage of patients receiving more than an average daily dose of ≥90 MME of opioids (PDMP measure) • Average days' supply per opioid prescription * • Percentage of patients with overlapping opioid and benzodiazepine prescriptions*	• Administrative data (e.g., detailing logs or records, key messages/revisions) • Stakeholders (academic detailers, clinicians) • PDMP prescribing data	• Surveys or interviews with clinicians to assess changes • Review of administrative data regarding detailing session • Review of PDMP or electronic health records (pre-post analysis[10])

[21] Prescribing metrics listed here are commonly reported within state PDMPs. For more information see http://www.pdmpassist.org/pdf/PDMP_admin/Report_Card_TAG_20170217_revised_final.pdf

[22] Clinician's behavior change goals are often set at the end of AD sessions. Evaluators may use these measures in a pre-post comparison to assess clinician behavior change. Pre-AD baseline data could be gathered for 3 months prior to the AD sessions, using a full month to 90 days of prescribing data for a given clinician. A post-AD comparison could then use at least 3 and up to 6 months' post intervention data (with ongoing checking quarterly to see if behaviors are reverting back to old practices over time). Data analysis should be done per clinician and at the practice-level (to be able to compare individuals to the larger group.) The outcomes selected should match the content of the academic detailing or clinician education. For example, if prescribing naloxone or not co-prescribing opioids and benzodiazepines is covered in the education/detailing, then those outcomes would be picked.

[23] Percent of opioid prescriptions can be displayed in PDMPs as an average of a clinician's patients receiving opioids and an average of opioid prescriptions written by a given clinician. These percentages may also be displayed based on MME dosage such as 0-50, 51-90, 91-200, & > 200.

[24] For more information about these measures see Bohnert, A. S., Guy, G. P., & Losby, J. L. (2018). *other measures listed are also from this same article.

		New opioid prescriptions[25]: • Percentage of patients with a new opioid prescription who have documentation that a PDMP was checked prior to prescribing • Percentage of patients with a new opioid prescription who have documentation that a urine drug test was performed prior to prescribing • Percentage of patients who had a follow-up visit within 4 weeks of starting opioids for chronic pain. • Long-term Opioid Therapy (see footnote 16): • Percentage of patients on long-term opioid therapy who have a follow-up visit every 90 days • Percentage of patients on long-term opioid therapy who have at least quarterly pain and functional assessments • Percentage of patients on long-term opioid therapy who have documentation that a PDMP was checked at least every 90 days • Percentage of patients on long-term opioid therapy for whom the clinician counseled the patient on the risks and benefits of opioids at least annually. • Percentage of patients on long-term opioid therapy who have documentation that a urine drug test was performed at least annually • Percentage of patients with chronic pain who had at least one referral to non-pharmacologic therapy as a treatment for pain • Percent of patients on long-term opioid therapy who are prescribed naloxone • Percentage of patients with OUD who are referred to MAT *Patients* • Changes to use of opioid medication (increase of nonopioid medications and/or nonpharmacologic treatments for pain) • Number of patients being referred to care for treatment of SUD and/or receiving MAT for OUD		

[25] These indicators are operationalized in CDC's Quality Improvement and Care Coordination: Implementing the CDC Guideline for Prescribing Opioids for Chronic Pain.

Outcome Sub-Categories	Evaluation Questions	Sample Indicators	Data Source	Data Collection Methods
Community and System Change Outcomes	To what extent did the program produce or contribute to the intended community and system outcomes?	**Short-Term** • Increased understanding among stakeholders of existing efforts to provide education and skill-building for clinicians/health systems **Intermediate-Term** • Changes over time to clinic or system's practices and/or policies (e.g., policies or practices related to opioid prescribing/tapering, co-prescribing naloxone, non-pharmacologic use/referral for treatment for pain)	• Administrative data (AD logs) • Stakeholders (clinicians and academic detailers)	• Surveys or interviews with stakeholders to assess changes • Review of administrative data regarding detailing session
Unintended Outcomes	What, if any, unintended outcomes (positive or negative) were produced as a result of academic detailing?	• Description of unintended outcomes (positive or negative) identified (e.g., further stray from best practices for prescribing or more clinicians wanting to receive academic detailing)	• Stakeholders (e.g. academic detailers, clinicians, staff from partner organizations)	• Stakeholder interviews • Review of any survey data/informational interview transcripts
Morbidity/ Mortality Outcomes	What were the changes in opioid-related morbidity and mortality when comparing before and after AD sessions?	**Long-Term** Number and percentage changes in morbidity and mortality indicators **Morbidity** • Patients receiving multiple naloxone administrations from EMS • Patients transported to ED by EMS where primary impression recorded as drug overdose • Patients refusing transport by EMS where primary impression recorded as drug overdose • EMS calls where naloxone was administered • Nonfatal overdose emergency department visits, all drugs • Emergency department visits involving nonfatal opioid overdose, excluding heroin • Emergency department visits involving nonfatal heroin overdose, with or without other opioids • Nonfatal overdose hospitalizations, all drugs • Hospitalizations involving nonfatal opioid overdose, excluding heroin • Hospitalizations involving nonfatal heroin overdose, with or without other opioids **Mortality** • Drug overdose deaths involving opioids • Drug overdose deaths involving natural, semi-synthetic, and synthetic opioids	• Private data sources (e.g. IQVIA, hospital discharge/billing) • NEMSIS and/or jurisdiction's EMS data • Local syndromic surveillance systems • SUDORS • BioSense	• Reviews of jurisdictional reports (e.g., annual progress reports) • Secondary data analysis • Review of opioid morbidity and mortality data dashboards or reports

		• Drug overdose deaths involving prescription opioid pain relievers: natural and semi-synthetic opioids and methadone • Drug overdose deaths involving natural and semi-synthetic opioids • Drug overdose deaths involving synthetic opioids other than methadone • Drug overdose deaths involving methadone • Drug overdose deaths involving heroin		

Glossary

Collaborating partners are those who may be actively engaged with implementing a given initiative.

Medication-assisted treatment (MAT are medications approved to treat opioid use disorder and alcohol dependence. Medications relieve the withdrawal symptoms and psychological cravings that cause chemical imbalances in the body. MAT programs provide a safe and controlled level of medication to treat opioid use disorder. Definition from SAMHSA: https://www.samhsa.gov/medication-assisted-treatment/treatment#medications-used-in-mat

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 stakeholder needs (Steckler, A & Linnan, L, 2002). 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***:** Describes the extent to which the intended target audience(s) 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 delivered or provided. Dose delivered is a function of efforts of the person delivering the intervention. The extent to which an academic detailer or other intervention provider actively engaged with, interacted with, and/or delivered intervention materials and resources to the intended audience (e.g., clinicians). Dose received is a characteristic of the intended audience (e.g., clinicians), 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 for understanding 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, acceptable to stakeholders, and is implemented with quality. Examination of these dimensions may also result in noted lessons learned, barriers, and facilitators that can help others when replicating similar initiatives.

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 (Rossi, PH, Lipsey, MW, & Freeman, HE, 2004). Outcome evaluations may examine the following areas:

Individua-level Outcomes: The extent to which the intervention has effected 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 effected 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 effected changes in target audience's morbidity or mortality.

Wraparound services are a variety of complementary services that may be needed by clients, such as primary healthcare, office-based opioid treatment, addiction care, outpatient treatment programs, inpatient treatment programs, mental health services, infectious disease treatment, obstetrics services, housing services, vocational or psychosocial rehab, and family resources.

Additional information on wraparound services can be found in these articles:

Brooklyn, J. R., & Sigmon, S. C. (2017). Vermont hub-and-spoke model of care for opioid use disorder: development, implementation, and impact. *Journal of addiction medicine*, *11*(4), 286.

Stoller, K. B. (2015, December). A collaborative opioid prescribing (CoOP) model linking opioid treatment programs with office-based buprenorphine providers. In *Addiction science & clinical practice* (Vol. 10, No. S1, p. A63). BioMed Central.

References

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.

Sheffer, M. A., Baker, T. B., Fraser, D. L., Adsit, R. T., McAfee, T. A., & Fiore, M. C. (2012). Fax referrals, academic detailing, and tobacco quitline use: a randomized trial. *American journal of preventive medicine*, *42*(1), 21-28.

Soumerai, S. B., & Avorn, J. L. (1990). Principles of educational outreach ('academic detailing') to improve clinical decision making. *JAMA: the journal of the American Medical Association*.

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.